EFFECT OF TEACHING ADOLESCENT STUDENTS A COGNITIVE-BEHAVIORAL INTERVENTION AND OF TREATMENT INTENSITY ON BEHAVIORAL RESPONSES TO ANGER

By

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EFFECT OF TEACHING ADOLESCENT STUDENTS A COGNITIVE-BEHAVIORAL INTERVENTION AND OF TREATMENT INTENSITY ON BEHAVIORAL RESPONSES TO ANGER

By

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Inappropriate responses to feelings of anger in adolescent populations merit the attention of researchers, practitioners, legislators, and community members because of the associated negative effects experienced by all in society. For example, excessive levels of aggressive behavior, an inappropriate response to anger, have been found to be stable over time and to be predictive of a multitude of negative developmental outcomes.

Cognitive-behavioral interventions represent a number of possible strategies to remediate deficits identified in adolescents who experience difficulty reacting appropriately to feelings of anger, such as reacting aggressively or withdrawing socially. But, researchers must scrutinize the procedures to identify salient variables and any resulting interactions that are responsible for increasing appropriate responses and to replace inappropriate behaviors with suitable conduct.

Because few investigators have targeted the reduction of anger related problems, it is difficult to draw reliable conclusions about the effectiveness of interventions designed to modify behavioral responses to anger. Treatments that employ a cognitive component to help students gain control over their behavior hold much promise, but specific elements must be identified so that practitioners can implement cognitive-behavioral interventions with a modicum of time and effort.

Thus, the purpose of this research was to determine the effect of a cognitive-behavioral intervention (i.e., teaching cognitive problem solving skills) and the effect of treatment intensity on inappropriate behavioral responses to anger by middle school students who exhibit chronic behavior problems in school settings. The students were served in either a special day school or in a self-contained, public school classroom for students with severe emotional disturbance (SED).

Results indicated that the curriculum provided students with the necessary skills to handle anger effectively by decreasing inappropriate external behavioral responses and increasing anger control, but no effect was identified for internal behavioral responses as measured by student self-reports and teacher checklists. Finally, the treatment intensity component provided students with additional practice on the problem solving skills. Results indicated that treatment students maintained effects at 4-week follow-up. Implications for practitioners, students, and researchers are also provided.

CHAPTER I

INTRODUCTION TO THE PROBLEM

Violence and aggression in U.S. schools is substantial and the frequency of such behavior is increasing. Targets of inappropriate behavioral responses include students, teachers, and staff members. In recent polls where the public has been asked to classify the largest problems facing the local public schools, lack of discipline and fighting/violence/gangs have been identified consistently as among the most serious problems. Since 1969, the American public has consistently ranked lack of discipline among the top 3 problems faced by public schools. In the most recent Phi Delta Kappa/Gallup Poll, Rose and Gallup (1998) found that fighting/violence/gangs and lack of discipline were designated as the 1st and 2nd most serious problems, respectively. This represents a definite increase from the previous years during which, Rose, Gallup, and Elam (1997) found that lack of discipline and violence were numbers 1 and 4 in the public's opinion and Elam, Rose, and Gallup (1996) found that lack of discipline and violence were numbers 2 and 3. The indication from the two polls is that lack of discipline and violence are increasing as concerns. Public opinion suggests that educators must continue to address problems associated with lack of discipline and violence.

As student violence and aggression become more prevalent in public schools, program design becomes crucial to insure school safety and to increase appropriate student social interactions. Educators are often left with few alternatives to counter the problems associated with inappropriate responses to anger which interfere with student learning; thus, the reduction of inappropriate responses to anger must be targeted, and students must be offered replacement behaviors to interact appropriately with their peer and authority figures, as well as to deal effectively with feelings of anger. Cognitive-behavioral interventions (CBI) represent one choice open to practitioners to provide students with the requisite skills to respond to anger in socially acceptable ways.

Cognitive-behavioral interventions offer practitioners one method to teach appropriate replacement skills that can be generalized to other settings and over time. Cognitive-behavioral interventions use the techniques of cognitive behavior therapy to modify various classes of disorders such as anxiety, fears, phobias, aggression, and disorders of conduct. Such approaches provide effective cognitive strategies (i.e., cognitive components) for individuals to modify their underlying cognitions. The CBI model engages a relationship between internal cognitive events and overt behavior change through teaching strategies that guide performance and reduce inappropriate behaviors. Through CBI, teachers can provide students with procedures to assist them in modifying their thoughts and beliefs, thereby promoting self-regulation (Robinson, Smith, Miller, & Brownell, in press).

Although preliminary use of CBI with children and youth exhibiting inappropriate behaviors is encouraging, Etscheidt (1991) indicated that evidence for whole hearted endorsement of these techniques is still insufficient. To identify children and youth for whom CBI strategies are effective calls for additional research into the critical components of interventions, including clearly specified training procedures, complete subject descriptors, and reliable and valid dependent measures by which to evaluate behavior change. For instance, along with child characteristics, Whalen, Henker, and Hinshaw (1985) delineated a comprehensive list of variables associated with CBI (e.g., specificity or generality of behavioral domains included; degree of involvement of parents, teachers, and peers; quality of purposeful training for maintenance and generalization). According to Robinson et al. (in press), "such multidimensional complexity will require researchers to describe their research efforts in enough detail for others to make informed decisions about replicating and advancing our knowledge and understanding. Additionally, future research will require attention to control of variables so that effective aspects of treatment can be identified." Specifically, there is a need for systematic and ongoing research to critique CBI techniques and to identify the salient components that affect change in student behavior. Thus, the purpose of my investigation was to investigate the effect of teaching adolescent students a cognitive-behavioral intervention and the effect of treatment intensity on inappropriate behavioral responses to anger.

Statement of the Problem

Inappropriate behavioral responses to feelings of anger in adolescent populations merit the attention of researchers, practitioners, legislators, and community members because of the associated negative effects experienced by all in society. For example, excessive levels of aggressive behavior, an inappropriate behavioral response to anger, have been found to be stable over time (Kazdin, 1987; Loeber & Dishion, 1984) and to be predictive of a multitude of negative developmental outcomes. Adolescents who demonstrate deviant levels of aggression have been found to exhibit poor overall school adjustment, higher rates of juvenile delinquency, greater than average rates of school dropout, increased rates of adult criminal activity, and clinical problems (Loeber & Dishion, 1984).

Cognitive-behavioral interventions represent a number of possible strategies to remediate deficits identified in youth who experience difficulty reacting appropriately to feelings of anger, such as reacting aggressively or withdrawing socially. But, researchers must scrutinize the procedures to identify salient variables and any resulting interactions that are responsible for increasing appropriate responses and to replace inappropriate behaviors with appropriate conduct. Future researchers must also design investigations that are methodologically sound. Instruments used to measure different constructs must be identified and reliability and validity data reported. In addition, methodology must be explained in sufficient detail to allow for subsequent replication, as well as support an incremental advancement of CBI allowing for stronger generality to target populations.

Because few investigators have targeted the reduction of anger related problems, it is difficult to draw reliable conclusions about the effectiveness of interventions designed to modify behavioral responses to anger. Nonetheless, some researchers (e.g., Lochman, 1985; Lochman, 1992; Lochman, Coie, Underwood, & Terry, 1993; Lochman, & Curry, 1986; Lochman, Curry, Burch, & Lampron, 1984; Lochman & Lampron, 1988; Lochman, Lampron, Gemmer, Harris, & Wyckoff, 1989) have begun to build a foundation that enables practitioners to make informed decisions about programming and provides researchers with sufficient information to replicate investigations. Treatments that employ a cognitive component to help students gain control over their behavior hold much promise, but specific elements must be identified so that practitioners can implement cognitive-behavioral interventions with a modicum of time and effort. More information must also be gathered about the maintenance and generalization of learned skills. Cognitive-behavioral interventions may offer a viable method for assisting students to become more independent, thus creating better learning environments with higher levels of safety. Ultimately, such research provides subsequent investigators with a template to begin future inquiries and to judge the efficacy of CBI treatments.

Purpose and Objectives of the Research

The purpose of this research was to determine the effect of a cognitive-behavioral intervention (i.e., teaching cognitive problem solving skills) and the effect of treatment intensity on inappropriate behavioral responses to anger by middle school students. The problem solving skills were taught through the use of self-instructional training modeled after Meichenbaum and Goodman's (1971) seminal investigation. Specifically, data were collected and evaluated to address the following questions:

1. What effect will training students, who exhibit problems responding appropriately to anger, to use a cognitive-behavioral intervention have on their behavioral responses to angry feelings?

2. Will different treatment intensities produce different effects on behavioral responses to anger in students who exhibit problems responding in socially acceptable ways?

3. Will students maintain treatment effects?

4. What effect will training students to use a cognitive-behavioral intervention have on their foundational knowledge about cognitive strategies? That is, will students be able to recall content level information presented in a cognitive-behavioral intervention?

5. According to the perceptions of students and teachers, what are the specific components of a cognitive-behavioral intervention that make it likely to be used and what are the qualities of student behavioral responses to anger before and after lesson presentations?

Rationale and Significance of the Research

Effective school level prevention of behavior problems requires that teachers be provided with the skills and tools to facilitate student change. Students must be taught skills (e.g., anger management, communication skills, cognitive problem solving skills) that will enable them to modify their response patterns effectively. Thus, instructional programming should focus on teaching the required skills and it should be economical in terms of the time and resources needed to be effective. If the program is not user friendly, it is less likely to be implemented or at best may be used inappropriately.

Of course, school-based treatment of inappropriate responses to anger (e.g., aggression, withdrawal) in adolescent populations represents a particular challenge for school personnel. Many students arrive at school with repertoires of behavior that include little more than aggressive responses to any situation because their experiences in the community demand that they respond with aggression or aggressive posturing (Larson, 1994). But, these same behaviors that are adaptive in the community prove maladaptive in the school environment. Students must be taught strategies to interact appropriately in social situations which entails restructuring their cognitive distortions of events and the motivations of others (Dodge, 1986).

Theoretical Foundation

The realization that certain individuals experience problems assessing social cues led to the development of a social cognitive model of anger arousal (see Dodge, 1986). Cognitive variables influencing reactions to anger have emanated from the work of theorists such as Ellis (1973), Novaco (1978, 1979), Meichenbaum (1977), Beck (1976), and Kendall (1993). In their view, humans evaluate events in the environment for cues about what behavioral response is required in a particular situation and react accordingly. From these perspectives, a social cognitive model emerged to explain the difficulties that some adolescents experience during social interactions.

The social cognitive model focuses on the cognitive distortions and deficiencies identified in aggressive children (Kendall, 1991; Kendall & Lochman, 1994) which often stem from their inability to appropriately respond in social situations and to anger. Research about anger and aggression is consistent with social information processing models of social competence in adolescent populations (Crick & Dodge, 1994; Dodge, 1986).

The premise underlying Dodge's model is that adolescents who encounter trouble responding appropriately in social situations often experience distortions during the initial stages of information processing (Lochman & Wells, 1996). According to the proposed model, adolescents approach a given social situation with certain capabilities which predisposes them to react in specific ways. The social cues that face adolescents dictate response patterns. Perceptions of the cues emanate from their processing of environmental events, including all social information. In most situations that are socially appropriate, adolescents respond based on an accurate, subconscious processing of the social cues. If adolescents are adept at this procedure, they are more likely to respond in socially acceptable ways and be judged to be socially competent. In contrast, if adolescents experience distortions in any stage of processing, the likelihood increases that they will respond inappropriately, including the possibility of aggressive behavior (Dodge, 1986).

It is also theorized that adolescents who experience problems responding appropriately in social situations (e.g., aggressively) exhibit deficiencies in their social problem solving abilities. Lochman and Dodge (1994) noted that highly aggressive adolescents and children generate fewer solutions to their social problems than do their nonaggressive counterparts. For example, aggressive preadolescent children generate more action-oriented solutions, such as pushing or fighting, as compared to verbal assertion solutions like talking about a conflict. Aggressive adolescents also tend to think of more physically aggressive solutions than do their nonaggressive counterparts (Asarnow & Callan, 1985; Lochman & Lampron, 1986). Similarly, aggressive adolescents generate fewer bargaining and compromise solutions and are less capable of accurately perceiving the motives of others. Thus, the solutions they develop are based on considering both the needs of self and others infrequently (Lochman, Wayland, & White, 1993). During the response-decision stage, aggressive adolescents tend to choose aggressive responses for social situations because they believe that such reactions will alleviate aversive behavior from others (Lochman & Dodge, 1994; Perry, Perry, & Rasmussen, 1986) and that their responses will not be negatively viewed by their peers (Slaby & Guerra, 1988).

Cognitive-behavioral interventions can target the cognitive distortions that cause adolescents to rely on inappropriate behavioral responses in social situations. Thus, my investigation incorporated components that targeted altering social distortions (e.g., perspective taking, understanding and handling anger) and provided requisite skills (e.g., effective communication skills, cognitive problem solving skills) to interact with others effectively and appropriately.

Definition of Terms

The following definitions were used for the purposes of this investigation.

Cognitive-Behavioral Interventions

Cognitive-behavioral interventions are predicated upon the tenets of cognitive behavior therapy to modify underlying cognitions which shape overt behavior (Kendall, 1993).

Anger

Anger refers to a multidimensional construct encompassing internal experiences and cognitions (i.e., thoughts) that are associated with stable and consistent belief systems and attitudes (i.e., views regarding how to interact with others and the environment; Furlong & Smith, 1994). Anger is often associated with overt behavioral responses which are integral to understanding it (Kassinove & Sukhodolsky, 1995); thus, reactions to anger must be viewed as distinct from the emotion.

Aggression

Bandura's (1973) definition for aggression states that "aggression is defined as behavior that results in personal injury and in destruction of property. The injury may be psychological (in the form of devaluation or degradation) as well as physical" (p. 5). Based on Bandura's definition, three specific types of aggression have been operationally defined: (a) negative physical actions: attacking or attempting to attack another with enough intensity to potentially inflict pain (e.g., biting, kicking, slapping, hitting, throwing, grabbing, tripping), (b) negative interpersonal interactions: interactions with peers or teachers that produce displeasure, disapproval, or disruption of the current activity, and (c) destruction of property: destroying, damaging, or attempting to destroy or damage property.

Self-Instructional Training

Self-instructional training involves teaching specific verbalizations that break the cognitive problem solving process into a step-by-step sequence. The strategy involves moving from overt verbalizations to covert ones and incorporates extensive modeling and feedback processes (see Meichenbaum & Goodman, 1971). Self-instructional training can enable students to resolve unique problems independently (Spivack & Shure, 1974).

Cognitive Problem Solving

Cognitive problem solving is intended to enable students to (1) recognize and identify a problem, (2) consider options and evaluate possible outcomes, (3) choose and implement a strategy that will help them solve the problem, and (4) help them evaluate the actual outcome (Kaplan, 1995).

Delimitations of the Study

This investigation is limited by geographical restrictions to school districts in west central Florida. Participants of this study will include students who have exhibited behavioral problems in school settings and who have problems responding to anger in socially acceptable ways. The students were provided educational services in restrictive settings (e.g., alternative school, self-contained classrooms). Selection of participants was limited by school administrators who volunteered to involve their school in the current study.

Limitations of the Study

The findings of this investigation may be generalized only to contexts similar to the context of this study. Contexts include educational setting and participant characteristics. Systematic replication of this study in other settings and with other populations is encouraged and recommended. Moreover, this investigation was conducted in schools where the administrative personnel volunteered their time. Teachers' and administrators' actual reasons for participating in the study have not been revealed which may impact findings. Chapter III includes specific methodological constraints.

Summary

In response to the increasing problem of violence and aggression in schools and the demands placed on teachers of students who have problems responding appropriately to anger, efficient and effective curricula must be developed that facilitate social and academic success in school, home, and community settings. Cognitive-behavioral interventions can provide the necessary skills for students to succeed by remediating areas of deficit. When focusing on inappropriate behavioral responses to anger, researchers have found that interventions must target cognitive distortions, social competence skills (e.g., communication), and cognitive problem solving skills (e.g., Kendall, 1991; Kendall & Lochman, 1994; Lochman & Lampron, 1986). The idea is that remediation of the deficits exhibited by adolescents who experience problems responding appropriately to anger will result in increased appropriate behavioral responses and increased ability to succeed under the demands imposed in traditional school environments.

Although research focusing on school-based cognitive-behavioral interventions holds promise for altering inappropriate response patterns (see Robinson et al., in press), few investigators have identified specific components (e.g., treatment intensity) responsible for substantive change. Thus, my investigation was designed to determine the effect of teaching a cognitive-behavioral curriculum and the effect of treatment intensity on adolescents' behavioral responses to feelings of anger, as well as to start the process of delineating salient elements of cognitive-behavioral programs.

Overview of the Remaining Chapters

The relevant literature related to this investigation is reviewed and analyzed in Chapter II. Research methods and procedures have been delineated in Chapter III. The results of the investigation have been reported and analyses presented in Chapter IV. Chapter V provides conclusions and implications of the results for practitioners and for further research.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

This study was an investigation of the effect of teaching adolescent students a cognitive-behavioral intervention and the effect of treatment intensity on inappropriate behavioral responses to anger. Anger is a multidimensional internal feeling or state that if acted on inappropriately can cause serious problems such as health related problems (e.g., hypertension, heart disease) and rejection by one's peers. For adolescents, developing skills to rationally and effectively contend with emotions such as anger is requisite for developing anger control which is necessary for success in school, community, and home. Anger, although not inherently a negative emotion, has components including frequency, intensity, and duration from which to judge it as appropriate or inappropriate. Kassinove and Sukhodolsky (1995) described the components as follows. The frequency of anger fluctuates from a person feeling angry much of the time to someone rarely experiencing anger, intensity can range from mild (e.g., annoyed, irritated) to strong (e.g., rage, fury), and duration ranges from short (i.e., fleeting) to long term (e.g., holding a grudge). Although the definition of anger centers on an internal state, the behavioral display of anger is an important element. Because people express anger in different ways, many behaviors (e.g., arguing, avoiding eye contact, being silent, yelling, fighting) are associated with the internal condition.

Inappropriate external expressions of anger (i.e., anger expressed toward people or the environment), including physical and verbal aggression (e.g., verbal harassment, fighting, destruction of property), represent one possible reaction to anger. High degrees of emotional arousal such as anger, however, may not correspond to visible aggressive incidents. For instance, anger can be suppressed or regulated through a variety of defense-oriented mechanisms (e.g., denial, rationalization, not talking about one's feelings) or through the use of moral or societal constraints against such behavior (Miller & Sperry, 1987). Nonobservable presentations or internal expressions to anger are distinguishable from observable or external ones. Conversely, anger can be expressed in nonaggressive, socially acceptable ways (e.g., problem solving, talking). Averill (1982) and Gadpaille (1984) noted that socially acceptable strategies for expressing and dealing with anger may vary from culture to culture and are often viewed as assertive methods.

Thus, my review of related literature begins with an overview about anger including a discussion about appropriate and inappropriate expressions of anger, as well as a description of the characteristics of adolescents who express anger inappropriately. The overview on anger will be followed by a detailed discussion about aggression, a specific behavioral response to anger, and the characteristics of adolescents who chronically exhibit aggressive and antisocial behaviors. Then a detailed description of the social cognitive model of anger arousal will be provided which focuses on the cognitive distortions and deficiencies experienced by adolescents who react inappropriately to anger. The next section will address cognitive-behavioral interventions which is the proposed methodology (e.g., cognitive problem solving) for remediating difficulties with anger expression. A discussion about treatment intensity, including findings of related investigations, will constitute the concluding section of Chapter II.

Anger

Constructs such as anger, hostility, and aggression have been assigned various meanings based on the theoretical model cited; thus, comparisons and analysis across different models becomes difficult because there are no universally accepted definitions (Lochman, Curry, Burch, & Lampron, 1984). Although the three constructs have been consistently differentiated, the available literature base has failed to provide clear distinctions. Nonetheless, researchers and practitioners must be careful not to equate aggression with anger and hostility in every situation. For example, it is possible for people to experience anger or hostility without exhibiting aggressive behavior, as well as the fact that some aggressive acts are not accompanied by feelings of anger or hostility (Huberty & Eaken, 1994). Anger has historically been evaluated in terms of physiological arousal and the labeling of that arousal as anger (Biaggio, 1980; Rothenberg, 1971), but it is critical to differentiate between feelings of anger and expressions to anger, including responses that are appropriate from ones that are inappropriate, whether internal or external.

Appropriate Responses to Anger

The appropriateness of a behavioral response to anger must be judged in the context of the culture in which the behavior is exhibited (Gadpaille, 1984). Averill (1982) identified four key elements that constitute a conception of the normal process of anger: (1) anger is a conflictual emotion, (2) anger is related to human aggressive systems and to the ability for cooperative social functioning, (3) anger targets the correction of some perceived injustice, and (4) anger serves to maintain socially accepted standards of conduct. Averill further noted that angry behavior (e.g., fighting, arguing) may be considered acceptable or unacceptable depending upon the circumstances. For example, defending the safety of one's family may involve responding in an angry manner which is viewed as socially acceptable. Moreover, the target of such retaliation may be more likely to conform to societal standards to avoid such consequences. In addition to expectations of negative consequences, several internal inhibitory mechanisms have been identified that are associated with the inhibition of inappropriate responses to anger: perceived responsibility, guilt, perspective-taking, and defense mechanisms (i.e., unconscious and conscious efforts to deal effectively with internal conflicts; Lochman et al., 1984). Specifically, appropriate responses to anger represent the exercise of rational, cognitive control over one's behavioral response to anger.

Internal Expressions to Anger

Internal responses to anger can be defined in terms of the frequency of experienced anger that is not expressed (i.e., suppressed; Spielberger et al., 1985). Even though adolescents may respond appropriately to feelings of anger which pose no problem to those around them, other issues may arise from internal expressions, especially if there is a lack of rational, cognitive control on the part of the individual. For example, there is a large body of data that has linked various components of anger to health related problems such as hypertension, heart disease, and cancer (see e.g., Hokanson & Sheter, 1961; Shekelle, Gale, Ostfeld, & Paul, 1983; Siegel, 1984).

When there exists a lack of rational control, an adolescent may experience feelings of anxiety. Anxiety tends to appear when an adolescent is equipped with self-regulating, inhibitory capabilities that are weak when compared to impulses or drives that are pushing for inappropriate external responses (Lochman et al., 1984). The associative feeling of anxiety can be eliminated or diminished in one of two ways: (1) by handling the feeling until better coping strategies or problem solving abilities can be used or (2) relying on maladaptive behavioral responses such as external expressions to anger.

External Expressions to Anger

In contrast to suppressed responses to anger, inappropriate external responses to anger can be defined in terms of how often responses to anger are in the form of physically or verbally aggressive behavior. The difficulties experienced in interpersonal relationships by angry, aggressive youth is well documented in the literature (see, e.g., Asher & Gottman, 1981; Bierman, 1986; Cantrell & Prinz, 1985; Lochman et al., 1993). For instance, aggressive youth are often avoided or rejected by their peers (Lochman & Lampron, 1986; Lochman et al., 1993). Although the reasons for rejection of youth who exhibit aggressive responses in social situations are varied, much of the current literature base indicates that social information processing deficits contribute to this problem which is exacerbated by the fact that aggressive, angry youth then have decreased social contacts

(Dodge, 1986). Additionally, nonaggressive youth tend to attribute hostile intent to the actions of their historically aggressive peers, whereas they are less likely to attribute hostile intent to the same actions exhibited by a nonaggressive peer (Lochman & Lampron, 1986).

Although there are numerous ways to define anger disorders, youth referred for treatment for anger related issues typically exhibit histories of anger control problems including behaviors such as yelling, hitting, cursing, property destruction, self-injurious behavior, or physical aggression (McLain & Lewis, 1994). The most prominent dilemma for youth who experience difficulties expressing anger appropriately (i.e., in socially acceptable ways) arises from the fact that the duration, intensity, and frequency of the inappropriate strategy (internal or external) may become severe enough to jeopardize their placement in the home, school, or community. Therefore, education professionals must provide students with the necessary skills to succeed in the environments in which they function.

Adolescents who express anger inappropriately (e.g., aggressively) display a range of cognitive deficits including limited problem-solving ability, poor social reasoning, lack of empathy, and poor perspective taking ability that differentiates them from their normal peers (Hudley, 1994). Moreover, numerous investigators have suggested that extremely aggressive youth are more likely to attribute hostile intent to others, despite contrary social cues (Dodge, 1980; Dodge & Newman, 1982; Nasby, Hayden, & DePaulo, 1980; Waas, 1988). Thus, school personnel must use remediation programs with adequate treatment intensity and sufficient treatment components to address individual problems in a group presentation format and researchers must identify the components that are necessary to facilitate skill acquisition so that inappropriate external responses to anger, such as aggression, can be avoided.

Aggression

Aggression is a set of primarily interpersonal actions that consist of verbal or physical behaviors that are destructive or injurious to others or objects (Bandura, 1973) and is one behavioral response to feelings of anger (Averill, 1982). Although most adolescents display various levels of aggression, it is only when it becomes exceptionally severe, frequent, or chronic that it indicates some form of psychopathology (Lochman et al., 1984). Researchers have indicated that aggressive behavior is quite stable during childhood and adolescence and tends to remain more consistent than other behavioral patterns over time (see e.g., Gesten, Langer, Eisenberg, Simcha-Fagan, & McCarthy, 1976; Olweus, 1979; Patterson, Reid, & Dishion, 1992). Olweus (1979) found substantial stability of aggressive reactions over time in a comprehensive review of 16 longitudinal studies of aggression in males from childhood through adolescence and into early adulthood. He also noted relatively high correlations between the frequency of aggression in preadolescence and the presence of aggressive behavior up to 10 years later. Based on these findings, Olweus provided convincing evidence that internal personality variables (e.g., competitiveness, temperament) are responsible for aggressive tendencies. In a prior investigation, Mischel (1968) concluded that situational factors played a larger role in aggressive responses; therefore, taken together, Olweus and Mischel's studies indicate that both environmental and internal factors contribute to adolescents' aggressive behavior in different situations and at varying ages. Lochman et al. (1984) emphasized that measures of aggression in adolescence must be viewed in relation to peers' measures because overall aggressive tendencies may change over time, but aggressive rankings in relation to peers' aggressive behaviors shows relatively strong stability. That is, although measures of aggression may decrease over time, these measures tend to reduce proportionally for all in a particular population so that each adolescent tends to remain at about the same ranking.

Loeber and Dishion (1984) noted that children who exhibit a variety of aggressive episodes and antisocial behaviors in a number of different settings (e.g., school, home, community) are at increased risk for continued disorder and are more likely to experience a wide range of negative outcomes, such as criminality, personality disorder, and substance abuse. Additionally, it should be noted that different researchers have identified varying types of aggressive behavior. Bergin and Garfield (1971) suggested that treatments should vary on dimensions such as intensity and mode of delivery. For example, adolescents with trait and reactive aggression represent different dimensions of aggression (Lockhart & Siegel, 1976). Trait aggression refers to chronic patterns of behavior while reactive aggression refers to aggressive behavior that is relegated to specific antecedent events (e.g., being reprimanded, being called a name). Lochman et al. (1984) recommended that youth with pervasive (i.e., trait) patterns of behavior be treated for problems related to perceptions of intentionality, as well as socialization issues (e.g., effective communication skills), whereas those who exhibit situational patterns (i.e., reactive) of behavior should be treated in relation to specific environmental stimuli (i.e., identify specific situations that precipitate aggressive or angry reactions).

Finally, school-based treatment programs must account for the background of students. Although aggressive reactions by students may not seem to work in school from the perspective of school personnel (e.g., student gets suspended and loses educational benefit), the fact remains that many students come from environments where aggression is advocated by parents and peers and may even be necessary for emotional and physical survival (Patterson, DeBaryshe, & Ramsey, 1989). Although aggressive behavior may be adaptive in the community to maintain emotional and physical survival, such behavior interferes with educational progress in the school environment. Larson (1994) suggested that schools are often placed in the unenviable position of changing maladaptive behavior patterns of students in school, while they are being powerfully reinforced elsewhere. Many students may not have adaptive, prosocial behavior patterns appropriate for the school environment; thus, it becomes the responsibility of school professionals to provide students with appropriate adaptive skills.

Social Cognitive Model of Anger Arousal

Research on the relationship between causal attributions and inappropriate responses to feelings of anger, especially aggressive behavior, is one of the most widely researched perspectives among investigators interested in identifying causes of aggressive behavior (Hudley, 1994). According to attributional theory, identifying reasons that people behave in certain ways is a major component of social situations (Kelley, 1973). The perceived attributions or causal explanations form the foundation for behavioral choices and facilitate decisions about how to behave in a given situation. As noted by Park and Slaby (1983), attributions represent internal mediators that govern the method to socially interact (e.g., aggressive, friendly) chosen by an individual.

Dodge (1986) delineated a social information processing model (i.e., social cognitive model) comprised of five sequential steps: (1) receiving and perceiving social input, (2) interpretation, (3) response search, (4) response decision, and (5) response enactment. He used this model to account for levels of social competence in children and adolescents. According to the proposed model, youth approach a given social situation with certain capabilities, which predisposes them to react in specific ways to the set of social cues they encounter. Response patterns to social cues emanate from their processing of the environmental events, including all social information. In most situations, youth respond based on subconscious processing of the cues. If youth are adept at this procedure, they are more likely to respond in socially acceptable manners and be judged to be socially competent. On the other hand, if they experience difficulty in any stage of processing, the likelihood increases that they will respond in inappropriate ways, including the possibility of aggressive behavior.

Shantz (1983) noted that normally developing children are able to distinguish hostile acts from benign ones based on the available social cues at the age of 5 or 6.

Numerous researchers (e.g., Dodge, 1980; Dodge & Frame, 1982; Dodge & Newman, 1982; Dodge & Somberg, 1987; Dodge & Tomlin, 1987; Graham, Hudley, & Williams, 1992; Nasby, Hayden, & DePaulo, 1980; Sancillo, Plumert, & Hartup, 1989; Waas, 1988), however, have indicated that children who respond in socially unacceptable ways may attribute hostile intent to others regardless of the present social cues. That is, they are not developing the required skills to understand the intentions of others effectively.

Children who react inappropriately to anger originating from misperceptions of the intent of others in social situations exhibit distinct differences from their peers who respond appropriately. For example, aggressive youth tend to display a bias toward inferring hostile intent in ambiguous situations, whereas nonaggressive youth will attribute benign intentions when the social cues are vague (Hudley, 1994). Hudley further stated that their bias is characterized by poor detection of intention, a more rapid rate of social decision making, limited attention to social cues, and a response bias that favors higher levels of aggressive, retaliatory behavior.

Hudley (1994) noted that the problem lies in the fact that these findings are correlational which indicates that there is a relationship between the aggressive behavior patterns and the decreased social competence skills. That is, it is unknown whether children who exhibit attributional biases for hostile intent tend to react in aggressive ways or if aggressive youth tend to develop such biases over time. Equally as plausible is the possibility that a third unidentified variable (e.g., differential treatment by peers, home environment) causes both.

Cognitive-behavioral views of anger and aggression (e.g., Dodge's model) emanate from theorists like Novaco (1979) who hypothesized an indirect relationship between provoking events and anger arousal. Novaco believed that physical incidents may precipitate a behavioral response or nonresponse, but the impetus for responding stems from a persons perceptions about what the circumstances mean. Thus, angry or aggressive arousal is mediated by underlying cognitions representing expectations and appraisals of a specific situation (Kendall, Ronan, & Epps, 1991).

Social cognitive interventions incorporate information-processing mechanisms and problem solving skills to provide individuals with the requisite competencies to address social situations appropriately based on accurate interpretations of events and the ability to generate socially acceptable alternative actions (Rubin, Bream, & Rose-Krasnor, 1991). Rubin and colleagues further noted that individuals' social competence can be defined in terms of a problem-solving framework. As part of this approach, social interaction is described as goal-directed behavior and social problem solving is regarded as the process for achieving social goals. Rubin and Krasnor (1986) defined social competence as the ability to accomplish personal goals during social interactions while simultaneosly maintaining positive social relationships.

If Dodge (1986), Hudley (1994), Shantz (1983) , and other researchers are correct about their hypotheses that inappropriate responses to anger and interpersonal conflict are the result of misinterpreted social cues, then researchers must design treatment packages that focus on altering cognitive biases. Adolescents who tend to react inappropriately during social situations must be taught to understand, identify, and control anger in themselves (e.g., through the use of relaxation techniques), to effectively communicate with others to facilitate positive social interactions, and to develop problem solving skills so that they can resolve conflicts effectively and appropriately, as opposed to using socially unacceptable methods (e.g., fighting, throwing a temper tantrum, destroying property). Cognitive problem solving represents a specific cognitive-behavioral intervention that can be used in conjunction with other strategies to remediate problems encountered by adolescents who react to anger and interpersonal conflict inappropriately.

Cognitive-Behavioral Interventions

Broadly defined, cognitive-behavioral interventions refer to common remedial approaches used in behavior therapy to modify various classes of disorders such as anxiety, fears, phobias, aggression, and disorders of conduct. Although the contemporary view of behavior therapy consists of assessment and treatment practices reflecting a cognitive orientation, Powers and Franks (1988) carefully state that behavior therapy does not represent a single or unified concept. The lack of a consolidated philosophy has led to a profusion of approaches which has brought about terminological obfuscation because different terms have developed to refer to procedures that have much in common. For example, Ellis (1962) proposed one of the earliest models, rational emotive therapy (RET) that incorporated underlying cognitions, Beck (1970) delineated the parameters of cognitive therapy which is also based on irrational thought patterns requiring intervention, and Spivack and Shure (1974) were among the first to describe cognitive problem solving as the requisite skill for dealing effectively with social difficulties.

Historical Foundations

Cognitive-behavioral interventions represents one of the most recent developments in the field of behavior therapy. The early development of behavior therapy procedures and technology was rooted in classical and operant conditioning paradigms without much regard to covert and unobservable phenomena. Behavior therapy gradually evolved into an approach with multidimensional goals and multi component treatment procedures including covert processes (Hughes, 1993). Cognitive-behavioral techniques emanate from the work of cognitive-semantic theorists such as Kelly (1955), Adler (1957), Ellis (1962), and Beck (1970). Thus, a number of different intervention and theoretical approaches have emerged based on the belief that underlying cognitions can help to explain and alter behavior.

Rational emotive therapy was predicated upon altering disordered thought patterns to change behavior. The idea was that irrational thoughts produce inappropriate overt behavior and neurotic feelings. Other researchers/theorists included Beck (1970) who delineated cognitive therapy which is also based on irrational thought processes requiring intervention and Spivack and Shure (1974) who were among the first investigators to delineate a structured program for teaching cognitive problem solving.

Cognitive-behavioral interventions for altering behavior are based on the premise that individuals have failed to internalize the inhibiting functions of language (Luria, 1961). That is, individuals who exhibit inappropriate behavior (e.g., youth with high levels of aggression or impulsivity) respond in an impetuous way to cognitive and social situations, thereby failing to rely on logic and reasoning to make sensible decisions (Kendall, 1991). Instead of taking the time to analyze the situation and make a well-thought decision, they act in a reactive manner based on the immediate circumstances and rely on minimal forethought.

Mahoney (1974) and Meichenbaum (1977) argued that the traditional behavior therapy reliance on operant and classical conditioning failed to accurately predict or explain complex human behavior, but they agreed that the model offered useful techniques. In their estimation, the techniques of behavior therapy were sound because simple overt behaviors (e.g., hitting) could be altered successfully, but to change broader, more complex behavior patterns like impulsivity or aggression, the techniques of behavior therapy should be expanded to include underlying cognitions. By completely ignoring cognitions as a vital component of overt behavior, behavior therapy techniques only temporarily changed behavior but failed to maintain lasting change or teach strategies to address future problems (Hughes, 1993). As such, cognitive approaches to alter behavior gained momentum in the late 1960s and early 1970s as researchers acknowledged the role of cognitive processes in behavior change.

Dember (1974) referred to the gradual acceptance of cognitive influences as the cognitive revolution because the role of cognition in the study of behavior and behavior change was gaining considerable attention. For instance, Bandura (1969) suggested that behavior change involved cognitive procedures, as noted in his theory of observational learning and his treatment of awareness which both referred to covert cognitions. It is

Bandura's belief that cognition plays an important role in overt behavior. Thus, self-control, as opposed to external control of behavior, emerged as a legitimate research concern. The emphasis on self-control led many researchers to study unobservable phenomena in greater detail.

Theoretical Base

Cognitive-behavioral interventions are predicated upon the use of verbal self-regulation. Verbal self-regulation is the use of language as an internal control on rational thought which impacts the development of overt behavior. In its simplest form, verbal self-regulation has been described as talking to oneself to guide problem solving or some other behavior (Mahoney, 1974; Mahoney & Kazdin, 1979; Meichenbaum, 1977). More complex forms of self-regulation represent an integral element in abstract thinking which relates to individuals' views on the world and their perceptions about the intentions underlying others' behavioral responses.

When applied to the behavior change of children and adolescents, cognitive-behavioral interventions can be directly traced to theories developed by Luria and Vygotsky, two Soviet theorists who studied the relationship between verbal and nonverbal behavior. The theories they proposed have been integrated with ideologies emanating from traditional behavior therapy strategies for behavior change to produce cognitive-behavioral approaches which hold promise in altering aberrant behavior in student populations and maintaining appropriate interactions (Harris, 1982; Meichenbaum & Burland, 1979).

Luria and Vygotsky hypothesized that language is an integral part of learning and behavior control. Vygotsky (1962) said that words direct mental operations which control behavior directed at solving a problem. He provided psychology with a mediational point of view about overt behavior and greater insight into cognitive processes. Based on his work with children, Luria (1961) suggested that there were three developmental stages used to verbally initiate or inhibit voluntary motor impulses or behaviors. Stage one consisted of the speech of others', usually a parent, controlling and directing a child's behaviors. As children get older, their own overt speech begins to control and direct their behavior. This control is recognized by observing that speech accompanies children performing many tasks. Overt verbalizations often accompany a child's behaviors at earlier ages. In the final developmental stage, overt verbalizations begin to decrease as inner or covert speech starts to control and direct behavior.

According to Luria's position, verbal and nonverbal behavior are not functionally equivalent. The verbal system is a higher order system which develops regulatory control over the nonverbal system. Luria's position suggested that particular social actions tend to follow, as opposed to precede, the verbal expression (overt or covert) of a related behavioral response. Cognitive-behavioral interventions (e.g., self-instructional training, rational emotive therapy, cognitive therapy) rely heavily on the use of language to alter inappropriate behavioral patterns. Modification of self-produced verbalizations represents a strategy for modifying underlying thought processes and is ultimately perceived as a way to change undesirable behavioral responses. Blackwood (1972) suggested that speech is a verbal chaining process that provides discriminative stimuli and conditioned reinforcers. That is, language contains cues that guide behavior. As evidence accumulated indicating the importance of such mediational processes in human learning (Bandura, 1977; Mahoney, 1974), researchers began investigating ways to use and modify these processes to initiate changes in related feelings and resulting behaviors.

Types of Cognitive-Behavioral Interventions

As inner processes (i.e., cognitions) began to receive more emphasis, cognitive-semantic therapists such as George Kelly, Albert Ellis, and Aaron Beck, individuals who believed that neuroses could be remediated by altering patterns of thought (private, nonverbal language), began to develop therapies to address clinical concerns by using language. For example, Kelly (1955) developed the theory of constructive alternativism to address neuroses in clinical situations. He theorized that by reconstructing the way people interpret situations or their environment (i.e., constructive alternativism) neuroses could be remediated. Anticipation plays a big role in Kelly's system. Peoples' reactions are directed by the way they anticipate events. Namely, Kelly claimed that by reconstructing the paradigms or constructs that direct individuals' actions, people could be taught to elicit appropriate behaviors in various situations. That is, verbal behaviors could be used to modify overt behavior. Seminal work such as Kelly's led to the development of a number of theories (e.g., rational emotive therapy, cognitive therapy, self-instructional training) designed to alter aberrant behavior. Investigators such as Ellis (1962) and Beck (1970) were among the first to indicate that verbal behavior effectively altered nonverbal behavior based on the results of empirical evidence. According to Meichenbaum (1993) the initial positive results reported by such therapists helped to catapult what became known as the cognitive revolution into mainstream psychology.

Rational emotive therapy (RET). In response to the observation that erroneous verbal patterns often accompanied emotional disturbance and building upon the work of researchers such as Kelly, Ellis (1962) developed RET based on the premise that altering erroneous thought patterns of patients would result in better social/emotional adjustment. The premise is that people act based upon their values and beliefs. The theory of RET holds that people do not react directly to situations or their environment; they react based on their interpretations and evaluations of the events that affect them.

Rational emotive therapy relies on a system referred to as the A-B-C theory (Ellis, 1977). A stands for some event that affects a person, B stands for the evaluation/interpretation of the event, and C represents the behavioral response. Perceptions, therefore, play a large role in behavioral responses. Based on this conviction, Ellis (1962) noted that irrational beliefs at stage B lead to inappropriate behavioral responses at stage C.

Thus, RET methodology was focused on detecting irrational beliefs that cause individuals to view the world in a distorted fashion and altering them so that a socially acceptable behavioral response can be elicited. Ellis (1977) noted that irrational beliefs are defined as "thoughts, emotions, or behaviors that lead to self-defeating or self-destructive consequences..." (p. 15). He further stated that the consequences must be perceived negatively by the individual. That is irrational thought patterns interfere with successful functioning in various environments.

Rational emotive therapy incorporates the basic tenets of problem solving to alter inappropriate behavioral patterns. To accomplish behavior change, the logico-empirical method is used to identify irrational beliefs, question their validity, develop alternative views, and act based on the new beliefs. Ellis (1977) noted that continued practice must occur to develop and maintain healthy thought patterns. Additionally, if modified, RET can be used to alter inappropriate behavior of youth. For example, De Voge (1977) and Meichenbaum and Goodman (1971) found that altering the verbal expressions of youth resulted in changes in overt behavior. Meichenbaum and Goodman's self-instructional training program is predicated upon altering self-statements to change behavioral responses.

Cognitive therapy (CT). Much like Ellis with RET, Beck (1970) used cognitive therapy to modify the faulty conceptions of patients. Many of his patients suffered from chronic depression, and he was able to alleviate symptoms by using CT to reconstruct faulty views of reality. Beck (1976) stated that CT involves identifying inappropriate views of the world, evaluating their validity, and replacing them with appropriate alternative concepts. By challenging misconceptions and developing new ways of perceiving events, individuals will be enabled to react in more appropriate ways.

Alford and Beck (1997) summarized the theory supporting CT. Meaning for people emanates from their perceptions of environmental events. People react in certain ways based on their meaning structures. Cognitive distortion or bias occurs when a person responds to situational events in maladaptive ways. Moreover, people are predisposed to react in specific ways; therefore, perceptions represent the key variable to address. Interventions must target altering inaccurate views and provide the necessary skills (e.g., effective communication skills, problem solving skills, understanding and handling anger) to interact in socially appropriate ways. The major premise of CT emanates from using an information processing approach to understand maladadaptive behavior and to develop effective interventions. Cognitive deficits are the result of information processing difficulties (Alford & Beck, 1997). Researchers who use self-instructional training view verbal behavior as the cognitive structure to be modified. The idea is that behavioral disorders can be altered by intervening with verbal behavior.

Self-instructional training (SIT). Based on the work of Luria (1961) and Vygotsky (1962), social learning theory (Bandura, 1977), and prevailing beliefs about mediational deficits, Meichenbaum and Goodman (1971) developed a self-instructional program to alter the impulsive response patterns of elementary students as measured by such instruments as the Matching Familiar Figures Test (MFFT) and the Porteus Maze Test. The procedure involved (a) an adult model performing a task while self-instructing aloud (cognitive modeling), (b) children performing the same task under the direction of the model's instructions (overt external guidance), (c) children performing the task while instructing themselves aloud (overt self-guidance), (d) children whispering the instructions as progressing through the task (faded, overt self-guidance), and (e) children performing the task while guiding performance through the use of private speech (covert self-instructions).

Following repeated trials of using the self-statements modeled by the trainer, a child's repertoire of statements is increased by means of response chaining, successive approximation procedures, and feedback procedures. Meichenbaum and Goodman (1971) delineated several performance related skills that are a part of the program: (1) problem definition, (2) focusing of attention and response guidance, (3) self-reinforcement, (4) self-evaluative coping skills, and (5) error correction procedures. These skills are designed to be used with a variety of tasks that are verbal and nonverbal and the training was designed to move from simple tasks to more complex cognitive operations. Finally, a major component consisted of the trainer modeling task performance while the children observe followed by the children engaging in the same behavior and receiving feedback about task performance.

In their initial investigation, Meichenbaum and Goodman (1969) sampled kindergarten students who were designated as reflective or impulsive based on results from the MFFT. A foot pressing task that required children to press a pedal when a specific colored light appeared and to keep the pedal depressed the entire time the light was on. If a different color light appeared, the children were directed not to press the pedal. The children first performed the task without any verbalization, then were taught to self-instruct aloud with the words "push" or "don't push," dependent upon the color of the light. The two groups, reflective and impulsive, did not differ significantly, when they used self-instructions, but according to Meichenbaum and Goodman the reflective children did significantly better when no self-instructions were used suggesting that covert self-instructions may be absent in the impulsive children's repertoire.

In a subsequent investigation, Meichenbaum and Goodman (1971) conducted a two-part study to investigate the effectiveness of self-instructional training on measures of impulsivity. In Study I, they investigated the effectiveness of verbal self-instructions for changing performance on measures of impulsivity in a sample of fifteen second graders receiving educational services in a remedial class. Five students were assigned to a control group, five were assigned to an attentional-placebo group, and five were assigned to a cognitive modeling plus verbal self-instructions group. Training tasks were conducted with the cognitive modeling group over a two week period and consisted of 30-minute daily lessons. Each child in each of the 3 groups was assessed based on the MFFT, the Porteus Maze Test, and the WISC subtests of Picture Arrangement, Coding, and Block Design, as well as teacher and observer ratings. Tests were administered before training, immediately after, and at a one month follow-up date. Of the three groups, only the verbal self-instructions group showed significant improvement on the WISC subtest of Picture Arrangement and the MFFT latency score. Both the attentional-placebo and self-instructions group improved significantly on the Porteus Maze test. No significant improvement was found on the WISC subtests of Coding, and Block Design, the MFFT error score, or in the classroom behavioral measures. Study I substantiated that altering the verbal behavior of children through the use of self-instructional training resulted in decreases in impulsive behavior. That is, the participants were able to control their overt behavior more effectively.

In Study II, Meichenbaum and Goodman (1971) compared the effects of modeling against the effects of modeling with self-instructions. Again, students were identified as impulsive based on results from the MFFT. Five students were randomly assigned to each of three groups: modeling alone, modeling plus self-instructional training, or an attentional-placebo group. Of the three groups, only the participants who received modeling plus self-instructions significantly improved their performance on the MFFT, latency and error scores, in relation to the other two groups and their initial performance. Thus, based on the results of the two investigations, Meichenbaum and Goodman noted that using modeling alone was insufficient. Modeling plus self-instructional training was necessary to decrease impulsive behavior significantly.

Since Meichenbaum and Goodman's (1971) seminal investigation, a number of investigators (e.g., Camp, Blom, Hebert, & Doorninck, 1977; Douglas, Parry, Marton, & Garson, 1976; Spivack & Shure, 1974) have attempted to replicate their results with different populations (e.g., regular education students) while focusing on different behaviors (e.g., aggression, academic improvement). Overall results have indicated that cognitive-behavioral interventions (e.g., self-instructional training) are appropriate for altering inappropriate behavior (see Robinson, Smith, Miller, & Brownell, in press).

Cognitive problem solving. In the past 25-30 years, a number of researchers have used adapted forms of the cognitive-behavioral perspective to explain social behavior (e.g., Dodge, 1986; D'Zurilla & Goldfried, 1971; Spivack & Shure, 1974) and developed treatment packages using problem solving skills to remediate social deficits. For instance, D'Zurilla and Goldfried (1971) defined problem solving as a behavioral process that enables the generation of a variety of alternative responses when faced with a problem situation, as well as increases the probability of effectively evaluating consequences so that the most appropriate choice can be implemented. They delineated five stages in the problem solving process: (1) general orientation, (2) problem definition and formulation, (3) generation of alternatives, (4) decision making, and (5) verification. D'Zurilla & Nezu (1980) later changed the first and last stages to problem orientation and solution implementation and verification, respectively.

D'Zurilla & Nezu (1982) subsequently identified a number of investigations that have been conducted to verify the D'Zurilla and Goldfried model, but most have been conducted with adult populations. Nonetheless, a couple of studies were focused on elementary school populations (Allen, Chinsky, Larcen, Lochman, & Selinger, 1976; McClure, Chinsky, & Larcen, 1978). In these investigations, the D'Zurilla and Goldfried model was redesigned to meet the needs of third and fourth graders.

Allen et al. (1976) noted significant improvement for the training group which received an anger coping program over the untreated control group following training and at four-month follow-up. They used a pretest-posttest design with measures of problem solving ability, locus of control, adjustment ratings, and sociometric peer ratings. McClure et al. (1978), also using a pretest-posttest design, found similar improvements on problem solving measures when compared with controls.

Another model, PROJECT AWARE, developed by Elardo and Caldwell (1979) was based on the work of Piaget. Investigations on developmental stages by Piaget (1928) indicated that egocentrism starts to decline in middle childhood. As egocentrism decreases, children begin to gain a stronger awareness of others due to an increased ability for role-taking. Based on this premise, Elardo and Caldwell designed a program to enhance abilities that typically develop during the middle school years. Thus, PROJECT AWARE relies on skills that younger children may not be capable of using adeptly for the purpose of facilitating social development. The stated goals of PROJECT AWARE were to strengthen the ability to understand the thoughts and feelings of others, the ability to accept individual differences, and the development of alternative and consequential thinking skills. The program primarily used discussion and role-play, and data indicated that gains were made in alternative thinking and behavioral adjustment (Elardo, 1977).

Without question, Spivack and Shure with their colleagues have conducted the most research in the area of problem solving. They have conducted investigations of social problem solving with young children (Shure & Spivack, 1972, 1978, 1979), adolescents (Platt, Spivack, Altman, Altman, & Peizer, 1974; Spivack, 1973; Platt & Spivack, 1977), and psychiatric populations (Siegel & Spivack, 1976; Platt & Spivack, 1972, 1974). Additionally, they have addressed theoretical issues related to mental health and adjustment (Spivack, 1973; Spivack, Platt, & Shure, 1976). Spivack, Shure, et al. developed a social problem solving program referred to as Interpersonal Cognitive Problem Solving (ICPS). The skills taught included the following:

1. Interpersonal sensitivity is the ability to be aware of potential and actual problems that affect social interaction,

2. Alternative-solution thinking is the capacity to generate alternative solutions to interpersonal problems, regardless of practicality,

3. Means-end thinking is the ability to articulate a plan to solve an interpersonal problem in a step-wise progression, while keeping goals and obstacles in mind,

4. Consequential thinking is the capacity to consider the consequences of how one acts in a social context, in terms of the way one's actions will affect others and oneself, and

5. Causal thinking is the tendency to link antecedent events with present events.

Spivack, Platt, & Shure (1976) noted that these skills enable individuals to mediate social adjustment and are trainable at various age levels provided modifications are made. In 1974, Spivack and Shure identified the link between adjustment and problem solving ability, specifically problems associated with interpersonal situations. Because their preliminary findings indicated that adolescents and adults were already deficient or skilled in their problem solving abilities, Spivack and Shure (1974) opted to explore the presence of such skills at the preschool level when interventions would be preventative, as opposed to reactive. More recently, researchers (e.g., Rubin, Moller, & Emptage, 1987) have found similar results to Spivack and Shure with the aggressive problems experienced by elementary students. They found that students rated as aggressive by their teachers had social information processing deficits which varied depending upon the individual's social goals.

Kendall et al. (1991) noted that cognitive-behavioral techniques for the treatment of childhood and adolescent disorders represent an combination of cognitive, behavioral, emotive, and developmental strategies. Effective programs incorporate components such as rewards, modeling, role-plays, affective education, homework, self-evaluation, and perspective-taking activities. Because modeling is an integral part of the cognitive-behavioral perspective, it is pertinent that teachers serve as valued models who make mistakes and cope effectively with them. In this way, youth can view appropriate methods for achieving success and dealing with failure.

The combined results of the identified investigations, as well as other studies, indicate that specific, planned interventions can improve interpersonal/social skills and possibly decrease inappropriate responses to feelings of anger. With this in mind, this investigation was focused on middle school students whom Piaget (1928) indicated might be better equipped developmentally to succeed at such tasks as problem solving taught through cognitive-behavioral interventions.

Current Status of Cognitive Behavior Therapy

Cognitive behavior therapy (CBT) represents a viable alternative to traditional behavior therapy for addressing the need to remediate behavioral excesses and deficits. Cognitive behavior therapy refers to techniques that provide individuals with the necessary tools to control their own behavior. The self-regulation of behavior is accomplished by providing individuals with a cognitive framework to address a myriad of self-control, academic, and interpersonal problems (Meichenbaum & Burland, 1979). Cognitive behavior therapy involves using cognitive strategies, such as problem-solving and self-instructional training, combined with behavior therapy methodology (i.e., traditional reinforcement/punishment paradigm) to control behavior. Specifically, CBM employs the principles of behavior therapy to modify underlying cognitions and thought processes that affect overt behavior (Mahoney, 1974; Meichenbaum, 1977). For example, self-instructional training can be used by students to inhibit undesirable behaviors by employing cognitive skills such as anger control, self-reinforcement, self coping, and traditional behavior therapy methods (see Manning, 1988). In an effort to change behavior, CBM components include the positive affects of behavior therapy concomitantly with cognitive activities. That is, the model integrates cognitions and behavior to change functioning in the context of individual social situations (Kendall, 1993).

One of the main features of cognitive behavior therapy approaches is a detailed account and measurement of the stimulus conditions (i.e., antecedent events), intervening processes (e.g., perceptions, thoughts), and overt actions (i.e., resulting behavioral responses), as well as the interrelationships between them. As noted by Bandura (1977), one's perception of reality is jointly determined by environmental determinants and constraints, personal constructions of that reality, and overt actions. Although many of these variables are difficult to define and quantify, the goal of CBT is to devise and implement the best method for altering inappropriate thought patterns which influence behavioral responses. For example, whereas physical and outcome variables are often easily controlled and counted (e.g., number of problems answered correctly, duration of an aggressive outburst), socially mediated events (e.g., an individuals' perceptions of actions) tend to be more elusive because they have to be measured indirectly. That is, a person thoughts cannot be measured directly. Indirect methods, such as self-report or observation of overt behavior, are necessary to measure such constructs.

Although the techniques inherent in CBT are promising in altering behavior of children and youth, closer scrutiny of their efficacy and efficiency is warranted, especially in school settings. We do, however, have insight into the effects of CBT on children and youth through an elaborate meta-analysis conducted by Dush, Hirt, and Schroeder (1989) and a more traditional literature review by Abikoff (1991). Dush and his colleagues conducted a meta-analysis of 48 studies to measure the observed effects of self-statement modification (SSM), a specific form of cognitive therapy, on childhood behavior disorders. These researchers selected studies whose participants exhibited disruptive or aggressive behavior, phobias and social anxieties, delinquency, and hyperactivity or impulsivity. Dush et al. included studies whose participants where in school settings, hospitals, residential treatment facilities, and outpatient clinics. Overall, Dush et al. found that participants exposed to SSM treatments experienced half of a standard deviation greater gain, on the average, than the no treatment and placebo treatment groups. As part of their global analyses covering numerous diagnostic categories, Dush and his colleagues found the ES for SSM on hyperactivity or impulsivity and disruption or aggression to be .38 and .18, respectively. The small ES for disruption or aggression might be due to the commingling of disruptive and aggressive categories resulting in studies whose participants were vaguely identified as disruptive by teachers to children with significant histories of physical aggression and lack of self control. The commingled diagnostic categories and some interventions conducted by therapists in clinical and residential treatment facilities demonstrates the need for a more refined selection of studies specific to definitive diagnostic categories with interventions conducted only in school settings.

Abikoff (1991) examined CBT studies and noted that few investigators reported significant positive results. He also found that a wide variety of cognitive tests were employed as outcome measures with the Matching Familiar Figures Test (MFFT) as the most frequent. The MFFT is a match-to-standard activity that requires the individual to choose the identical match for a specific stimulus from a number of related choices (Kagan, 1966). Not only did Abikoff find that 62% (8 of 13) of the investigators reported no positive effect and that only 15% (2 of 13) suggested treatment generalization, he also identified inherent problems in a number of the studies, such as the MFFT being used during the training phase. Of note is that Abikoff's analysis focused primarily on children identified as having attention deficit-hyperactivity disorder and there was no delineation about how the studies were chosen for his review.

The reviews conducted by Abikoff (1991) and Dush et al. (1989) indicated a need for further investigation regarding the efficacy of CBT techniques. Robinson et al. (in press) used meta-analysis to examine 23 CBT investigations that targeted the reduction of hyperactivity/impulsivity and/or aggression in school settings. The mean effect size across all the studies was 0.89 and 89% of the studies had treatment participants who experienced greater gains on both posttest and maintenance measures when exposed to a treatment with a cognitive component. Additionally, they noted that their meta-analytic findings indicated that CBT interventions implemented in school settings resulted in treatment effects that were maintained following intervention.

Robinson et al. (in press) analyzed results from both immediate and follow-up data and substantiated that CBT interventions appear to provide lasting effect in reducing scores on measures for hyperactivity/impulsivity and aggression. Although their results contrast those found by other investigators (e.g., Abikoff, 1991; Whalen et al., 1985) who maintain that the utility of CBT interventions has not been established, meta-analytic techniques allow researchers to account for all the variations within studies and aggregate the results to determine the relative overall strength of CBT interventions (Glass, 1977). For example, meta-analysis contrasts the technique used by Abikoff (1991) in which he counted and compared the number of effective versus ineffective studies (refer to Light & Smith, 1971).

Because there are disparate findings from one investigator to the next, future researchers must begin to develop a body of research that is predicated upon replication of previous research efforts and conclusions emanating from the results of competent methodology. Moreover, all investigators must report their methods and results in sufficient detail so that subsequent investigators can attempt to replicate their results and test the validity of their conclusions. One component of CBT interventions that has received little attention is treatment intensity. The notable exception is the work conducted by Lochman and his colleagues.

Treatment Intensity

Treatment intensity is a major characteristic of interventions likely to affect process and outcome (Heinicke, 1988; Kazdin, 1987). In general, treatment intensity refers to the length of time that an intervention package is presented to participants, however, the term is often used by various sources to delineate different concepts. Treatment intensity has been addressed in different ways: (1) exposure to treatment (i.e., total number of minutes or hours in a program), (2) duration of treatment (i.e., weeks or months), and (3) number of sessions. For example, Lochman (1985) investigated the effect of treatment intensity (i.e., number of minutes of exposure to the treatment) on aggression, whereas Heinicke (1988) defined treatment intensity in terms of the number of sessions provided in family treatment packages. Furthermore, Lochman and colleagues have also varied treatment durations by delivering a 12-treatment intervention over 12 weeks and an 18-week intervention over 18 weeks. Therefore, investigators must delineate specific definitions for treatment intensity to ensure accurate comparisons among intervention strategies and to help identify components that make an intervention effective.

To design treatment programs that are economical in terms of time and resources, investigators must compare the effect of differing treatment durations and/or exposures. To become automatic, skills must be practiced and reinforced beyond the point of initial mastery (Vockell & Mihail, 1993). Thus, providing students with more opportunities to practice skills in a nonthreatening environment increases the probability that the skills will be generalized over time and to other settings. Additionally, it is pertinent that appropriate treatment intensities be identified because of the futility of designing programs with abbreviated exposure or duration that results in little or no effect and the cost of designing unnecessarily lengthy interventions.

A number of researchers (e.g., Lamminmäki et al., 1997; Lochman, 1985; Longabaugh, Wirtz, Beattie, Noel, & Stout, 1995; Perri, Nezu, Patti, & McCann, 1989) investigated the issue of treatment intensity with different presenting problems (e.g., anger, aggression, obesity, alcoholism) and concluded that programs with increased exposure to treatment (i.e., number of minutes) will result in greater treatment gains. For instance, the results found by Longabaugh et al. indicated that treatment intensity should be determined in conjunction with participant characteristics when treating alcoholism. In evaluating the facets of treatment efficacy, Whalen et al. (1985) concluded that specific child characteristics (e.g., cognitive abilities, expressive language abilities) may interact with CBT instructional components (e.g., treatment intensity); therefore, specific attributes must be identified when choosing a program to remediate deficits associated with hyperactivity.

Waltman and Zimpfer (1988) defined treatment intensity in terms of number of hours of exposure to treatment, where short term interventions contained less than 12 hours of treatment and long term over 12. They conducted a meta-analysis to analyze the aggregate results of 26 investigations that included varying treatment intensities for counseling groups. The findings of their analysis suggested that a minimum of 12 hours of treatment must be included to affect outcome measures.

Similarly to Waltman and Zimpfer (1988), Heinicke (1988) found that treatment packages with 11 or more sessions showed greater gains than those that included 10 or fewer. He analyzed the results of early family intervention research and concluded that treatment intensity significantly affected outcome measures. Heinicke (1990) conducted a related review in which he analyzed research on the psychotherapy of school-aged children and arrived at the same conclusion about treatment intensity.

In contrast, Shapiro et al. (1994) noted disparate results for psychotherapies to help patients overcome depression. Shapiro and colleagues compared patients who were exposed to 16 sessions against patients who only received 8 and stated that the treatments were broadly equivalent in effectiveness (see e.g., Robinson, Berman, & Neimeyer, 1990; Shapiro & Shapiro, 1982; Stiles, Shapiro, & Elliot, 1986), but patients with relatively severe depression improved substantially more after 16 sessions than after 8 (Shapiro et al., 1994). The indication is that increased treatment intensity improves outcomes for patients with depression.

Although the majority of investigators studying the effects of CBT interventions reported treatment duration and exposure variables (i.e., treatment intensity), few have focused on this component of the treatment package as a factor to be manipulated. One notable exception is Lochman and his colleagues. The original anger coping program designed by Lochman, Nelson, and Sims (1981) incorporated only 12 lessons. Initially, Lochman et al. (1984) used the 12-lesson format to treat aggressive youth, but in subsequent investigations (e.g., Lochman et al., 1989), they used 18 sessions to deliver the treatment package.

Lochman (1985) compared the 12-lesson format to an 18-lesson format for delivering an anger coping program. He noted that participants taught through the 18-lesson format improved significantly on measures of aggression as compared to those receiving exposure to only 12 lessons. The 18 lessons were delivered over 18 weeks, while the 12 lesson group received exposure over 12 weeks. Subsequent studies (Lochman, 1992; Lochman & Lampron, 1988) substantiated these findings.

The influence that treatment intensity has on CBT intervention outcomes must be identified so that effective and efficient programs can be designed. When targeting the remediation of social interaction deficits, interventions must be designed that account for salient variables. Past research indicated that treatment intensity is a salient variable to be manipulated; therefore, future researchers should substantiate or refute this conclusion and delineate other important factors (e.g., participant characteristics) to be considered when designing treatment packages.

Summary and Implications

Inappropriate behavioral responses (e.g., suppression of anger, aggression) to feelings of anger have been associated with negative outcomes in youth and adolescents; thus, treatment packages must be designed to provide the necessary skills to employ appropriate responses to those feelings. Many treatment programs have been based on one or more of the following components of children's behavior: (a) the actual overt behavior, (b) social cognitive aspects of children's functioning, (c) and children's relationships with significant others (e.g., parent/guardian, teachers, peers). For instance, Patterson (1982) developed a primarily behavioral approach, Spivack and Shure's (1974) social problem solving skills training and Lochman, Nelson, & Sims (1981) anger coping program are social cognitive in nature, while psychodynamic approaches (Keith, 1984) focus on interactions with significant others.

Numerous investigators have hypothesized that children who react inappropriately in social situations do so because they misperceive the intentions of others. That is, youth who exhibit inappropriate responses to anger, often manifested in aggressive acts, tend to attribute hostile intentions to others without regard to the available social cues (Dodge, 1986). Dodge described a social information processing model comprised of five sequential steps: (1) receiving and perceiving social input, (2) interpretation, (3) response search, (4) response decision, and (5) response enactment.

The five steps in Dodge's (1986) theoretical model parallel social problem solving treatment steps which include (1) problem definition (i.e., how do I interpret some social input), (2) solution generation (i.e., response search), (3) choosing a solution based on evaluation strategies (i.e., response decision), and (4) implementation (i.e., response enactment). Additionally, self-evaluation techniques, including self-reinforcement and self-coping statements, can be used to help an individual effectively evaluate the outcome, as well as deal with success or failure. Thus, CBT interventions that incorporate problem solving skills hold promise for altering aberrant behavior.

As identified throughout the literature, inappropriate responses in social situations are often accompanied by distortions of reality and an inability to recognize the precursors of angry outbursts (e.g., rapid heartbeat, sweaty palms). Practitioners must account for such deficits by training adolescents to identify physical signs of anger, to develop skills to control angry feelings (e.g., relaxation techniques), and to develop skills that will facilitate effective communication (e.g., effective listening skills) in social situations.

Because adolescents who experience problems responding to anger appropriately exhibit deficits in a number of areas, a multi-faceted treatment program has been designed. Students who exhibit inappropriate responses to anger and in social situations were presented topics on subjects such as understanding and handling anger, effective communication, and problem solving skills. Additionally, problems that are germane to the students were identified with their input so that concrete examples could be presented in the form of role-plays and modeling. In this manner, students were enabled to implement strategies emanating from a program that provided them with the requisite skills to experience greater levels of success in various social situations.

CHAPTER III

METHODOLOGY

My investigation of the effect of teaching adolescent students a cognitive-behavioral intervention (i.e., a 10 or 15 lesson curriculum) included information from quantitative and qualitative (social validation component) sources. The main purpose of this study was to investigate the effect of teaching adolescent students a intervention and the effect of treatment intensity on inappropriate behavioral responses to anger. Additionally, there was an underlying intent to design an intervention that was efficient for teachers and effective for students to assist them in expressing feelings of anger appropriately. Use of a variety of techniques to gather and convey knowledge to decision makers about programs and their outcomes helps them to make informed decisions about policy.

The use of quantitative and qualitative research on the effect of teaching a cognitive-behavioral intervention to students who experience problems expressing anger in appropriate manners is important for a number of reasons. First, using quantitative research techniques enables researchers to identify and analyze relationships between variables such as teaching problem solving skills and the resulting changes in the ways that anger is expressed by students. Quantitative researchers use statistical methods to measure the degree or amount of some construct (e.g., anger; Shavelson, 1988) and allows investigators to substantiate conclusions emanating from data. Additionally, quantitative research techniques help to validate qualitative findings by substantiating identified trends and conclusions (Strauss & Corbin, 1990). Finally, the process of selecting a sample permits the generalization of results to a larger population (Shavelson, 1988).

Qualitative research, on the other hand, involves interacting with participants in their own territory, in their own language, and on their own terms (Kirk & Miller, 1986). While quantitative research is a measure of the degree or amount of some variable (Shavelson, 1988), qualitative research is measuring the absence or presence of some construct (Van Mannen, 1988). Qualitative investigators focus on process as well as outcomes which allows inductive analysis of descriptive and comparative data from the natural setting based on the perspective of the participants (Bogdan & Biklen, 1998; Yin, 1994). Thus, I interviewed the students about the cognitive-behavioral curriculum to identify, from their perspective, components that are effective (i.e., social validation component). Speaking directly with students facilitated identifying background characteristics that predispose them to react to program components favorably and subsequently to deal with anger effectively. Qualitative research relies on description to answer research questions (Kirk & Miller, 1986). Description represents the method for gathering data to gain a stronger understanding of a concept, such as designing effective cognitive-behavioral curricula; therefore, qualitative research is appropriate to study the effect of cognitive-behavioral interventions in depth. As noted by Robinson et al. (in press), cognitive-behavioral interventions are promising for altering behavior (e.g., behavioral responses to feelings of anger), but the specific elements that facilitate the change have not been identified. The interview procedure I used began the process of delineating essential factors, as well as characteristics that make a person more likely to benefit from CBI. Thus, the interview process served as a social validation component.

The remainder of Chapter 3 addresses the technical rigor of the proposed research. The chapter is organized into the following sections: methods, research procedures, and summary. The methods section includes a description of the research questions, the participants and setting, and the instrumentation, while the section on research procedures includes discussion about the research design, null hypotheses, independent variables, and data analysis. Finally, the chapter is summarized and expected outcomes are discussed.

Methods

Description of the Research Questions

To design cognitive-behavioral interventions that are both effective and efficient, salient components need to be identified. Based on the results of their meta-analysis of school-based studies, Robinson et al. (in press) concluded that cognitive-behavioral interventions must be practical in approach to assist students with behaving appropriately (e.g., controlling impulsive or aggressive behavior) and help teachers with their instructional time and effort. Robinson and colleagues stated that despite their overall efficacy, little is known about which components facilitate effective behavior change and possible interactions with individual characteristics. For example, Whalen, Henker, and

Hinshaw (1985) noted that CBT researchers have paid insufficient attention to specific student characteristics that may interact with program elements. Along with student characteristics, Whalen et al. identified a number of important dimensions that can be expected to influence outcome, such as (a) number and types of behavioral domains included; (b) specificity or generality of cognitive components; (c) mix of cognitive, affective, motivational, and behavioral elements; (d) frequency, duration, and sequencing of training sessions; and (e) quality of purposeful programming for maintenance and generalization. Based on the results obtained and recommendations outlined by these investigators, I identified the following questions:

1. What effect will training students, who exhibit problems responding appropriately to anger, to use a cognitive-behavioral intervention have on their behavioral responses to angry feelings?

2. Will different treatment intensities produce different effects on behavioral responses to anger in students who exhibit problems responding in socially acceptable ways?

3. Will students maintain treatment effects?

4. What effect will training students to use a cognitive-behavioral intervention have on their foundational knowledge about cognitive strategies? That is, will students be able to recall content level information presented in a cognitive-behavioral intervention?

5. According to the perceptions of students and teachers, what are the specific components of a cognitive-behavioral intervention that make it likely to be used and what

are the qualities of student behavioral responses to anger before and after lesson presentations?

The answers to these research questions were collected through administrations of the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1988), the Children's Behavior Checklist (CBCL; Achenbach & Edelbrock, 1979, 1983), giving recall tests following the curriculum lessons, interviewing students regarding the use of the cognitive-behavioral intervention and perceptions about its utility, including salient components. Specifically, question 1 was answered through the pretest and posttest administrations of the STAXI and CBCL, question 2 was answered through statistical comparisons between the two treatment groups, question 3 was answered by the follow-up administrations of the STAXI and CBCL, question 4 was answered by the results on the recall tests, and question 5 was answered by the interviews conducted with the teachers and students and information from students permanent records. The results of these data provides researchers and practitioners with an improved understanding of cognitive-behavioral interventions, including effect on adolescents' responses to anger, whether treatment effects are maintained, and whether adolescents are able to retain lesson content. The results also lay the foundation for identifying salient components of cognitive-behavioral interventions, such as treatment intensity, and for determining student characteristics that help or hinder the use of cognitive-behavioral interventions. Based on the information gathered, the future development of effective and efficient programs is facilitated.

Setting and Participants

The sites for this investigation were located in two small rural districts in north central Florida. The two school districts are described in terms of gender representation in Table 1 and minority representation in Table 2 for the 1998-1999 school year. Before initiating the program, permission was obtained from school district officials, the principal at each of the three schools, and the teachers in the nine classrooms. The principal investigator met with each of these groups individually and obtained permission to initiate the program in each of the sites. Subsequently, letters describing the proposed investigation and procedures were sent to the students' parents to get their permission, followed by obtaining verbal consent from the students during an oral presentation by the principal investigator.

Student participants were 6th, 7th, and 8th graders enrolled in three classes at one special day school (School 1, N = 22) located in district 1, for students who have exhibited chronic behavior problems (e.g., repeated fighting, blatant disrespect for authority, uncontrollable outbursts) and students enrolled in 6 self-contained SED programs in 2 regular education schools (School 2, N = 15; School 3, N = 23) located in district 2 for a total of nine classrooms. Behavior management strategies in each of the classrooms consisted of traditional methods such as relying on suspension, time-out, and administrative intervention. No management strategies with cognitive components were used in any of the classrooms prior to the introduction of the intervention. Number of students, teachers, and gender of students in the 2 districts are delineated in Table 3 and minority representation is shown in Table 4. Students enrolled at the special day school (School 1) were unable to function successfully in a less restrictive setting and were removed from their normal school programs for behavioral reasons, while students in the SED programs in the regular public schools (Schools 2, 3) have experienced similar problems but have not been removed from their neighborhood schools.

Table 1

Gender Representation by District for School Year 1998-1999

District	Female Students (%)	Male Students (%)	Total Students
1	14,454 (49.2)	14,931 (50.8)	29,385
2	18,147 (48.2)	19,529 (51.8)	37,676

Only students with IQS of 80 or higher were included in the statistical analyses. Researchers have found that students with IQS that reflect cognitive disabilities (i.e., < 80) exhibit no measurable positive effects on specific knowledge or skills when exposed to a

Table 2

Minority Representation by District for School Year 1998-1999

District	White (%)	Black (%)	Hispanic (%)	Asian (%)	American Indian/ Multi-racial (%)
1	16,274 (55.4)	11,052 (37.6)	1,073 (3.7)	681 (2.3)	305 (1.0)
2	26,189 (69.5)	8,344 (22.2)	2,461 (6.5)	271 (0.7)	411 (1.1)

Table 3

Students and Teachers and Gender Representation by School for School Year 1998-1999

School	Female Students (%)	Male Students (%)	Total	Teachers
1	53 (30.1)	123 (69.9)	176	17
2	693 (49.7)	701 (50.3)	1,394	74
3	676 (51.9)	626 (48.1)	1,302	66

Table 4

Minority Representation by School for School Year 1998-1999

School	White (%)	Black (%)	Hispanic (%)	Asian (%)	American Indian/ Multi-racial (%)
1	44 (25.0)	129 (73.2)	1 (0.6)	1 (0.6)	1 (0.6)
2	1,136 (81.5)	131 (9.4)	111 (8.0)	10 (0.7)	6 (0.4)
3	706 (54.2)	541 (41.6)	38 (2.9)	8 (0.6)	9 (0.7)

program that introduces problem solving skills (Lauth & Wiedl, 1989). That is, the students are often unable to apply problem solving skills. The indication is that students with extreme cognitive disabilities would not receive the same benefit with their skills for dealing with anger from a program that teaches detailed problem solving skills.

A cluster sampling procedure was used to assign groups. One classroom from each school was assigned to either a treatment or control group to ensure that each group was comprised of participants with similar demographic and behavioral backgrounds. The first classroom drawn from each school was assigned to treatment A, the second to treatment B, and the last to the control group resulting in one classroom from each of the schools being assigned to each of the three groups.

Commitment to participate in this investigation was obtained from the principal and teachers at each of the schools, as well as the appropriate School Board representatives and district level personnel from the two school districts that participated in the research. Institutional Review Board (IRB) approval (refer to Appendix A) was also received and the necessary paperwork was forwarded by the appropriate personnel in the two participating districts.

Instrumentation

Children's Behavior Checklist (CBCL).

There are different forms of the CBCL that can be completed by parents, parent surrogates, and teachers for children and adolescents aged 4 to 16. The instruments consist of items delineating a broad range of behavior problems and social competencies (Achenbach, 1978; Achenbach & Edelbrock, 1979, 1983; Evans, 1975). Additionally, there is an observation recording form that can be used to triangulate the findings from the other scales.

Each of the 118 behavior problem items is scored on a 3-step (Likert type) response scale. Through factor analytic procedures, Achenbach and Edelbrock (1983) identified the following 9 dimensions of behavior that emanate from the problem behavior scale: (1) somatic complaints, (2) schizoid, (3) uncommunicative, (4) immature, (5) obsessive-compulsive, (6) hostile-withdrawn, (7) delinquent, (8) aggressive, and (9) hyperactive. Achenbach's (1991) revision resulted in 10 subscales consisting of the following syndromes: (I) withdrawn behavior, (II) somatic complaints, (III) anxious/depressed behavior, (IV) social problems, (V) thought problems,

(VI) attention problems, (VII) delinquent behavior, (VIII) aggressive behavior, (IX) sex problems, and other problems. Additionally, internalizing and externalizing groupings of behavior/emotional problems were identified by conducting second order factor analyses of syndromes I to VIII. Scales I, II, and III comprise the internalizing subscale (i.e., withdrawn behavior, somatic complaints, anxious/depressed behavior); the three scales (i.e., social problems, thought problems, attention problems) that did not have consistently high loadings on either the internalizing or externalizing subscales were considered separately; and scales VII (delinquent behavior) and VIII (aggressive behavior) constitute the externalizing subscale (Achenbach, 1991). These broader groups were based on what researchers viewed as (e.g., Achenbach & Edelbrock, 1978; Quay, 1979; Spielberger, 1988) identifiable problem behaviors based on the nature of how these problems are expressed. Finally, it should be noted that there exists a distinct relationship between the internalizing and externalizing scores on the CBCL. Although they represent contrasting types of problems, internalizing and externalizing behaviors are not exclusive and typically correlate positively across children (Achenbach, 1991).

The CBCL (Achenbach, 1966) represents research efforts of 30 years to develop an objective and standardized descriptive measure of the behavior problems and social competencies of children and adolescents. It was designed for use in clinical and research settings. The most recent revision (Achenbach, 1991) includes items that list a broad range of problems relevant to the mental health of children and adolescents and which are easily observed by parents and teachers.

The CBCL was designed to be completed by adults who know the students well and who have knowledge about their behaviors in a variety of settings; thus, the teachers completed the CBCL on each student in their classroom. Ratings for the checklist items are recorded on a three-step response scale for the problem behaviors and social competence scales. The format for the problem behaviors section included 0 = not true, 1 = sometimes true, and 2 = often true. The ratings for the social competence section were modified as follows: 0 = less than average or worse, 1 = average or about the same, and 2 = above average or better. Additionally, questions about the number and quality of friendships and about school behavior were incorporated in the social competence section.

Scoring procedures produce separate scores for the behavior problems and social competency sections based on the raw score from the individual items. The total raw score can then be converted to a T score that allows for comparisons between individual scores and normative values. Normalized T scores have a mean of 50 and standard deviation of 10 when derived from a normal distribution of raw scores. The CBCL, however, uses T scores that are based on the percentiles of the distribution of raw scores so that non-normal distributions can be transformed into more normal ones. The process of analyzing scores based on the percentiles permits comparisons to be made more easily (Achenbach & Edelbrock, 1983).

Numerous investigations substantiate the reliability of the CBCL (Achenbach & Edelbrock, 1983). Achenbach and Edelbrock assessed test-retest reliability, interrater agreement, and longer-term stability to substantiate the instrument's reliability. The reliability of individual items was assessed by computing intraclass correlation coefficients (ICC). All the ICC reliability scores were in the .90 range. For example, the ICC for 3-month stability of mother's ratings on individual items was .838 for behavior problems and .974 for social competency. The reliability estimate used for the scale scores, total behavior problem scores, and total social competency scores was the Pearson correlation coefficient.

The reliability coefficients for the test-retest and interrater agreement for the individual items on both scales (i.e., behavior problems and social competence) were all substantial. Test-retest scores for item scores on the behavior problems items were .95 at one week and .84 at three months while scores for the social competence items were .99 at one week and .97 at three months. Interrater agreement was .96 for the behavior problems items and .93 for the social competence items. Similarly, reliability estimates for the total scale scores at one week, 6 months, and 18 months for test-retest values were substantially large. Only the interrater reliability score for the social competence scales at .59 deviated from the other values. Interrater reliability for the behavior problem scales was .64. These findings suggest that the CBCL items and scale scores are consistent over time and raters for ages 6 to 16.

Achenbach and Edelbrock (1983) used content, construct, and criterion-related validity to validate the CBCL. Previously, Achenbach and Edelbrock (1981) found that children who were referred to mental health clinics received significantly higher scores on the behavior problems scales and significantly lower scores on the social competence scales than a similar sample of nonreferred children. Achenbach and Edelbrock used discriminant analysis strategies which facilitated categorizing the two samples into their respective populations (Crocker & Algina, 1986). These findings indicated that the items on the CBCL do differentiate independent mental health concerns (e.g., behavior problems v. social competence issues).

Content validity is an indication of how effectively the content of a measure reflects an intended goal as perceived by certain individuals (Shavelson, 1988). Although, the CBCL met the needs of parents and mental health personnel in Achenbach and Edelbrock's (1981, 1983) investigations of the CBCL, they cautioned prospective users to judge its appropriateness for their purposes. Because the CBCL focuses on internalizing and externalizing behaviors, similar to the State-Trait Anger Expression Inventory (Spielberger, 1988), it met the needs of my investigation in which I was interested in identifying the effects of teaching a cognitive-behavioral intervention and treatment intensity on adolescents' behavioral responses (i.e., internal or external) to anger.

Construct validity refers to a measurement device being theoretically related to some construct that is being assessed (Shavelson, 1988). Based on this understanding, Achenbach and Edelbrock (1983) used other well documented measures which were similar in purpose to establish construct validity. Specifically, they compared subscales from the Conners (1973) Parent Questionnaire and the Quay-Peterson (1983) Revised Behavior Problem Checklist that were roughly analogous to scales in the CBCL. Pearson correlation coefficients were found to be significant $r = .91$ and $r = .92$ ($p < .05$), respectively. Achenbach and Edelbrock (1983) noted that these results were comparable to similar studies conducted with intelligence tests; thus, they found reasonable agreement between the CBCL and its parallels.

Finally, Achenbach and Edelbrock (1983) used referral for mental health services to serve as the criterion to substantiate criterion-related validity. They documented differences between demographically matched referral and nonreferral samples on all scales and found that most of the effects associated with clinical status accounted for the majority of the variance ($\geq$ 26%, $p < .001$) in the scores.

State-Trait Anger Expression Inventory (STAXI). The STAXI is a paper and pencil self-report questionnaire that provides a concise measure of the experience and expression of anger (Spielberger, 1988). Spielberger, Jacobs, Russell, and Crane (1983) noted that many of the previous measures of anger confounded the experience of anger with aggressive behavior and hostility; therefore, they constructed an inventory similar in concept and format to the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970).

As measured by the STAXI, anger is conceptualized as encompassing three major components. Anger-Out represents the first component and refers to the expression of anger toward people and the environment. The second component, Anger-In, refers to anger that is directed inward (e.g., suppression of angry feelings). Finally, Anger-Control refers to individual differences in attempts to control the expression of anger (Spielberger, 1988).

The STAXI is comprised of 44 items which form six scales and two subscales. The six scales are as follows: (1) State Anger (SAS) is a 10-item scale that measures intensity of angry feelings at a specific time, (2) Trait Anger (TAS) is a 10-item scale that measures differences in the disposition to perceive a variety of situations with angry feelings and is divided into 2 subscales, Angry Temperament and Angry Reaction, (3) Anger-In (AX-I) is an 8-item scale that measures the frequency of suppression of angry feelings, (4) Anger-Out (AX-O) is an 8-item scale that measures the frequency that an individual expresses anger toward people or the environment, (5) Anger Control (AX-C) is an 8-item scale that measures the frequency that an individual attempts to control the expression of anger, and (6) Anger Expression is a research scale including the responses from scales 3, 4, and 5 which provides an index for the frequency of anger expression, regardless of the direction (Spielberger, 1988).

The STAXI is a self-report instrument for individuals aged 13 to adult. Individuals rate themselves on 4-point likert type scales where 1 = almost never, 2 = sometimes, 3 = often, and 4 = almost always. The scales were designed to assess either the intensity of angry feelings or the frequency with which angry feelings are expressed, suppressed, controlled, or experienced.

Numerous investigators have reported information on the reliability and validity of the STAXI in the past 15 years (e.g., Jacobs, Latham, & Brown, 1988; Stoner, 1988). Jacobs et al. (1988), for example, reported test-retest reliability scores for the STAXI scales. For the SAS, alpha reliabilities range from .88 to .95 with the highest reliabilities for college students (Deffenbacher et al., 1996; Spielberger, 1988; Spielberger et al., 1983). The SAS correlates minimally with the TAS under neutral conditions (Spielberger, 1988) but to a greater degree under provoked conditions (r = .55; Deffenbacher, Demm, & Brandon, 1986; Deffenbacher & Sabadell, 1992). Under provoked conditions, the SAS has strong concurrent validity with anger measures such as the Anger Inventory (r = .60; Novaco, 1975) and the Anger Symptom Index (r = .37; Deffenbacher, Demm, & Brandon, 1986). Spielberger (1988) substantiated convergent validity of the SAS through a large scale administration in which he found a significant correlation with the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) and various scales from the State-Trait Personality Inventory (Spielberger, 1979) indicating concurrent validity.

The TAS internal consistency reliabilities range from .81 to .91 with the highest reliabilities for college students (Spielberger, 1988). The TAS correlates positively with a variety of anger and hostility measures such as the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957) and with various state anger measures (Spielberger, 1988) and discriminates high-anger from low-anger groups (Lopez & Thurman, 1986, Spielberger, 1988).

The Anger Expression Inventory (AX) is made up of the AX-I, AX-O, and AX-C subscales and has alpha reliabilities that range from .73 to .84 (Spielberger, 1988). The AX-I is uncorrelated or minimally correlated with AX-O or AX-C, which are negatively correlated with one another. These patterns of correlation indicate that the subscales are measuring different behavioral responses so that suppressed anger can be differentiated from outward expressions of anger. For the purposes of my investigation, discrimination among various forms of anger expression provided a clearer understanding of the effect that cognitive-behavioral interventions exert on specific personality characteristics. As Whalen et al. (1985) noted, individual participant characteristics that influence the effect of an intervention must be identified. The STAXI is an instrument capable of distinguishing interaction styles. Finally, validity for the AX scales is reflected in different patterns of correlations with other variables such as blood pressure, trait anger, and trait anxiety (Deffenbacher, 1992; Spielberger, 1988).

Student and teacher interview. I interviewed a random sample of students (n=9) from the population of students included in the two treatment groups. Two cohorts of students were identified through self-report, teacher-report and observation: students who reacted positively to the program and students who reacted negatively. The interview (see Appendix B) consisted of questions about successful and unsuccessful components of the program, students' use of program components in school and other settings, and changes that students view as necessary to improve program content. Additionally, students' characteristic strategies for handling and expressing anger were explored so that practitioners can design programs that meet individual needs. Husband and Foster (1987) delineated interview methodologies typically used by qualitative investigators. I used focused interview techniques. According to Husband and Foster, the focused interview allows the interviewer to obtain standard information from all participants but the phrasing and ordering of questions are designed to meet each individual's characteristics. Students were interviewed following implementation of the curriculum.

Each teacher involved in presenting the curriculum was also interviewed so that appropriate components could be identified and unnecessary ones deleted. Teachers also provided insight (i.e., descriptive information) into student characteristics that predispose them to react in certain ways to the components of the cognitive-behavioral intervention.

Recall tests. Recall tests (refer to Appendix C) were given to all students in the two treatment groups following various curriculum lessons. The tests were designed to substantiate whether the students were able to learn a cognitive-behavioral intervention and whether retention of content occurred.

Research Procedures

Research Design

In this investigation, I evaluated three groups using a pretest-posttest, control group design. The three groups received the following variations of the training program. The first treatment group received a cognitive-behavioral intervention (see Appendix D) that was administered over a 10-week period. The first 5 weeks consisted of two lessons each week and weeks 6-10 constituted the treatment intensity variation of the investigation. During weeks 6-10, weekly practice lessons designed to provide increased practice of the problem-solving skills were presented to students in treatment Group A. Treatment Group B consisted of students who received the same treatment package in weeks 1-5, but did not receive practice lessons in weeks 6-10. Researchers who have studied academic instruction point out that students require increased practice to bring skill acquisition to an automatic level, especially students with special needs (Vockell &

Mihail, 1993). With this variation between groups, the effect of treatment intensity was assessed. Chi Square analyses were conducted to determine if there were any preexisting differences between the three groups based on race or age, and ANOVAs were used to determine if there were differences among the groups based on pretest scores from subscales of the STAXI AND CBCL prior to treatment.

The remainder of the students were assigned to a no-treatment control group that did not receive the cognitive-behavioral training program. This component of the design allowed evaluation of the effects of the cognitive-behavioral intervention through comparisons between each treatment group and the control. The students in the control group, as well as their parents, were informed of the assessment procedures and given the option to attend training in the future, if desired.

Type of intervention served as the independent variable in the quantitative portion of the investigation with the two treatment groups receiving training in understanding and handling anger, effective communication skills, and cognitive problem solving. Comparisons were made between the two treatment and the control groups. Additionally, treatment Group A was exposed to 5 additional practice lessons so that comparisons could be made between treatment groups A and B to assess the influence of treatment intensity.

Null hypotheses. The comparisons were evaluated to accept or reject the following null hypotheses:

1. There is no significant difference between the two treatment groups and the control group on the STAXI subscales at posttest.

2. There is no significant difference between the two treatment groups and the control group on the CBCL subscales at posttest.

3. There is no significant difference between the two treatment groups and the control group on the STAXI subscales at follow-up.

4. There is no significant difference between the two treatment groups and the control group on the CBCL subscales at follow-up.

No significant differences were indicated on any of the CBCL subscales at follow-up between students receiving the cognitive-behavioral curriculum (i.e., practice and non practice groups) and those receiving no cognitive-behavioral curriculum. The lack of statistically significant findings resulted in a failure to reject the null hypothesis.

5. There is no significant difference between Treatment Group A (practice lesson group) and Treatment Group B (non practice lesson group) on the STAXI and CBCL subscales at posttest.

6. There is no significant difference between Treatment Group A (practice lesson group) and Treatment Group B (non practice lesson group) on the STAXI and CBCL subscales at follow-up.

7. Students will be able to recall content level information presented through the use of a cognitive-behavioral intervention.

Trainers. The trainers consisted of classroom teachers who were trained to present the curriculum lessons so that all the students received the same exposure to the content material. The teachers attended an hour-long training session and were trained at their respective school sites by the principal investigator. The teachers were given curriculum copies prior to the training so that they could familiarize themselves with the material and to provide an opportunity to identify questions before the training session. Training consisted of introducing each of the lessons, discussing each of the activities in detail, and answering questions to ensure that the teachers were familiar with the concepts and learning strategies. Twenty percent (n=3) of the lessons presented by each teacher were observed by graduate students from a college of education to evaluate treatment fidelity. The graduate students were trained to mark checklists (see Appendix E) that correspond to the specific lesson observed. Retraining of the teachers proved unnecessary. Lessons two, six, and nine were chosen randomly to be observed in all treatment classrooms.

All personnel involved in the training met with the primary investigator on at least a weekly basis to discuss problems and receive clarifications. All persons involved in the project training were employed by the training site facility, except for graduate students who assisted with data collection and entry. Additionally, the primary investigator was available by phone to assist with any unforeseen problems.

Independent variables. Both treatment groups were taught a 10-lesson curriculum (see Appendix D) of approximately 50 minutes each over a 5-week period for a total of 500 minutes of treatment exposure. Two lessons were taught each week. An additional five practice sessions (see Appendix D) of approximately 50 minutes each were conducted with one of the treatment groups over an additional 5 week period for a total of 10 weeks of intervention and 750 minutes of treatment exposure. Generally, the format consisted of presentation or review of the rationale, involvement in an exercise (e.g., discussion, role-play, student activity) related to the training content, and final review of each day's progress. Lesson content was presented to the teachers in the form of lesson plans that included objectives, goals, and activities. Teachers were encouraged to individualize presentation styles to meet their needs as long as all content was covered.

Each lesson has an introduction, training strategies, and objectives. The objectives describe what the students should master by the end of the lesson, the introduction explains the goals of each lesson, and the training strategies provide the methods to achieve the individual lesson goals. Finally, the students were encouraged to use the strategies outside of the training sessions whenever they found themselves getting angry.

The presentation strategies were intended to make the training meaningful for the students. Problem situations were drawn from their personal experiences so that the solutions identified could be used during their day to day interactions. One of the main goals of the training program was to provide the students with the tools to identify problem situations in their daily lives, including individual responses to anger, to think slowly through possible solutions, and to implement the best one based on the evaluation of the potential outcomes. Finally, the training was designed to facilitate internalizing the skills and using them where and when necessary.

School-based treatment of inappropriate responses to anger (e.g., aggression, withdrawal) in adolescent populations represents a particular challenge for school personnel. Many students arrive at school with limited repertoires of appropriate behavior. Because their experiences in the community sometimes demand that they respond with aggression or aggressive posturing (Larson, 1994), many students rely on similar response patterns at school. The same behaviors that are adaptive in the community often prove maladaptive in the school environment; therefore, students must be taught strategies to interact appropriately in social situations which entails restructuring cognitive distortions of events and perspectives about the motivations of others (Dodge, 1986).

Because many students require instruction to address inappropriate social interaction skills and distortion of social cues, the elements of this cognitive-behavioral intervention included (a) lessons on understanding and handling anger, (b) lessons about effective communication, (c) introduction to relaxation techniques, (d) presentation of problem-solving skills (e.g., problem identification, choosing among alternative solutions, evaluating the outcome), (e) modeling of the intervention steps, and (f) practice (e.g., role-playing the use of the overt and covert self-statements) paired with feedback.

During the second lesson, the students were introduced to using hassle logs (see Appendix F). Hassle logs provided the students with a tool to identify situations in which they felt angry and the specific ways that they reacted to the provoking event. The hassle logs were used to gather descriptive information about anger provoking situations for each participant. Information was obtained about the time and place of the incident, the anger provoking element, who provoked the participant, the behavioral response, a self-reported level of anger, and the students reaction to the outcome. The information provided generalization data about the students' use of the problem solving skills in school and other settings. From participant volunteers, illustrative provocations were used to practice the skills taught during the training. The logs assisted the students with recalling problems that were more meaningful to everyone involved in the training. Feedback was paired with each step practiced during use of cognitive problem solving in the curriculum lessons. Some of the lessons called for the individual to practice the steps with feedback provided by the teacher and class, while others suggested class input and discussion regarding each step and possible answers.

Meichenbaum and Goodman (1971) delineated a self-instructional training package that relies on student self-management of behavior through covert verbalizations. Each self-instruction represents one step in the learning process. Verbal self-instructions are taught to the student in the following manner: (a) the teacher models the task performance and talks aloud while the students observe, (b) students perform the task, instructing themselves aloud, (c) the teacher models task performance while whispering the self-instructions followed by the students performing the task while whispering to themselves, (d) the teacher performs the task using covert self-instructions with pauses and behavioral signs of thinking (e.g., scratching head) and the student performs the task using covert self-instructions.

The self-instructional training procedure was one of the main strategies for presenting the problem solving skills to the students. The problem solving lessons in this investigation were developed from the work of researchers such as Spivack and Shure (1974) and Larson (1994) in which they delineated steps that included (a) problem definition, (b) generation of possible solutions, (c) evaluation of the possible solutions, (d) implementation of a solution, and (e) evaluation of the outcome.

Problem solving strategies are intended to enable students (1) to recognize and identify the problem, (2) to consider options and evaluate possible outcomes, (3) to choose and implement a strategy that will help them solve the problem, and (4) to help them evaluate the actual outcome following implementation. Finally, the students were taught to use self-reinforcement statements (e.g., "I did a good job") when the response was appropriate and successful and self-coping statements (e.g., "I will do better next time") when unsuccessful. Self-reinforcement and self-coping are intended to strengthen the students' thinking skills and to reinforce following the steps for problem solving.

Lessons 11 through 15 (refer to Appendix D) were designed to provide the students with opportunities for increased practice of the problem solving skills. The format of these lessons was the same as Lessons 1 to 10. A number of researchers (e.g., Lamminmäki et al., 1997; Lochman, 1985; Longabaugh, Wirtz, Beattie, Noel, & Stout, 1995; Perri, Nezu, Patti, & McCann, 1989) have investigated the issue of treatment intensity with different presenting problems (e.g., anger, aggression, obesity, alcoholism) and concluded that programs with increased treatment intensity (i.e., number of minutes) will result in greater treatment gains. Waltman and Zimpfer (1988) defined short term treatment packages as less than 12 hours of treatment and long term as greater than 12 hours of treatment. The findings of their meta-analysis suggested that a minimum of 12 hours of treatment must be included to affect outcome measures. In another review that addressed treatment intensity, Heinicke (1990) found that treatment packages with 11 or more sessions showed greater gains than those that included 10 or fewer. Based on the results of such investigations, I included a treatment intensity component in which one treatment group was exposed to 15 sessions with 12.5 hours of total treatment exposure, while a second group received only 10 sessions with 8.3 hours of exposure.

Pilot study. A pilot study was conducted in a self-contained varying exceptionalities classroom in a regular education school. There were 13 students in the classroom with varying exceptionalities (e.g., emotional or behavioral disabilities, learning disabilities). The pilot was administered to ensure that the materials were appropriate for at-risk and special needs students at the middle school level. The lessons were taught over a shorter time period (3 weeks) and feedback was gathered from the teacher who presented the lessons. To provide feedback, the teacher completed a questionnaire (see Appendix G) about each curriculum lesson. The teacher identified perceived strengths and weaknesses of each lesson and suggested content modifications. Recommended modifications were based on the developmental level of middle school students (e.g., Are the lessons developmentally appropriate?) and material being presented (e.g., Is all information covered?). After reading the comments, the primary investigator debriefed the teacher to obtain a detailed account of changes necessary to improve the training to meet the needs of middle school students who experience problems reacting appropriately to anger.

The teacher presented lessons 1 through 10 and one practice lesson over the three week period. Following week two, the primary investigator met with the teacher to clarify any misunderstandings and to ensure that sufficient materials had been provided. As the lessons were presented, the teacher got feedback from the students about the quality of the lessons. This information was communicated to the primary investigator during the final debriefing and was used during the revision process. Subtle changes were made as necessary.

Additionally, the dependent measures were piloted to ensure that they were appropriate. Two students completed STAXI forms and the teacher filled out the CBCL on the same two students. All participating students used the hassle logs and completed the exercises in the student workbook. The information gathered was used to modify activities and the hassle log, as necessary. The students also completed the recall tests after each lesson to ensure that special needs middle schoolers were able to learn the material.

Finally, the interview protocols (teacher and student) were piloted prior to full-scale implementation. Questions were deleted or added based on the responses given by the students in the two treatment groups and by the teachers. The final interview protocols (see Appendix B) were determined following two pilot interviews with students involved in the treatment groups that lasted 25 and 30 minutes. Questions that failed to prompt responses about reactions to anger or the program were deleted, while participant responses that identified themes related to anger control were added.

Data Analysis

Data collection methods included standardized measures (e.g., self-report instrument, checklists), interviews with teachers and students, observation of lessons, and recall tests.

All students rated themselves on the STAXI (Spielberger, 1988) and CBCL (Achenbach & Edelbrock, 1983) prior to training, immediately after training, and at a 4-week follow-up time. The STAXI was administered during class time and the CBCL was given to teachers to be completed on each of the students. Interviews were conducted with a smaller cohort of the students at each of the schools in quiet environments. Recall tests were given to the two treatment groups following lesson presentations to measure retention of lesson materials.

Question 1: What effect will training students, who exhibit problems responding appropriately to anger, to use a cognitive-behavioral intervention have on their behavioral responses to angry feelings? was answered through triangulation of the following dependent measures: the STAXI, the teacher form of the CBCL, and the interview process. Question 2: Will different treatment intensities produce different effects on behavioral responses to anger in students who exhibit problems responding in socially acceptable ways? was answered by comparing the two treatment groups on the dependent measures (i.e., STAXI, CBCL). Question 3: Will students maintain treatment effects?) was answered by comparing the results of the follow-up measures to the posttest. Question 4: Will students be able to learn a cognitive-behavioral intervention? was answered by the results of the recall tests. Question 5: What are the specific components of a cognitive-behavioral intervention that make it likely to be used and what personal characteristics predispose adolescents to react positively or negatively? Was answered by the interview process.

Analysis of the quantitative data. The analysis of the quantitative data was divided into two major components: analysis of the differences between the three groups on the pretraining, posttraining, and follow-up data collected from administrations of the (1) STAXI and (2) CBCL. Based on these analyses, the hypotheses were accepted or rejected. Additionally, only children with IQS of 80 or above were included in the final analyses to avoid contaminating the results of the study with issues of mental retardation and its impact on learning cognitive-behavioral skills . Intelligence Quotient testing data was gathered from the students' permanent records.

To identify the effect of training on anger expression, ANCOVAs were conducted to see if the intervention exerted any influence over the length of the investigation. Comparisons were made between the three groups to identify differences following intervention. Finally, to decrease the chance of committing a Type I error, the Bonferroni inequality strategy was conducted to identify a more conservative alpha level. The equation is as follows: $\alpha_c = \alpha / c$, where α refers to the alpha level and c refers to the number of comparisons. For the purposes of this investigation, $\alpha = .05$ and there were 10 comparisons conducted on the CBCL and 8 on the STAXI; therefore, the resulting alpha levels were $\alpha_c = .0050$ for the CBCL and $\alpha_c = .0063$ for the STAXI (Kennedy & Bush, 1985; Weinfurt, 1995). Separate corrections were conducted for the two instruments because one is a student self-report instrument (STAXI) and the other is a behavior checklist (CBCL) completed by the teachers.

Analysis of the social validation data. The social validation data gathered in this investigation represents a smaller component of the overall investigation. The data from the participant interviews was analyzed through the process of rewriting, rereading, discussion, coding, and comparing. Rewriting involved verbatim transcriptions of the interview audiotapes (Spradley 1979). Independent reliability checks verified the accuracy of the transcriptions. Rewriting, discussion, and rereading provided all interviewers an opportunity to engage in theoretical discovery, to identify concepts, and to identify theoretical propositions through delineation of themes within the data (Spradley, 1979; Strauss & Corbin, 1990).

Finally, the information gathered from the recall tests was analyzed. The information from the recall tests delineated how detailed students are when asked specific questions about lesson content. From this information, conclusions were drawn regarding the ability of middle school students to learn content from a cognitive-behavioral curriculum.

Summary

Chapter III is a detailed description of the cognitive-behavioral intervention and data collection procedures used in the study of the effect of teaching adolescent students a cognitive-behavioral intervention on behavioral responses to anger. This investigation also provided empirical data about salient variables in cognitive-behavioral interventions and information about participant characteristics that make them likely to respond positively or negatively to such a program. Answers to the following questions were identified.

1. What effect will training students, who exhibit problems responding appropriately to anger, to use a cognitive-behavioral intervention have on their behavioral responses to angry feelings?

2. Will different treatment intensities produce different effects on behavioral responses to anger in students who exhibit problems responding in socially acceptable ways?

3. Will students maintain treatment effects?

4. What effect will training students to use a cognitive-behavioral intervention have on their foundational knowledge about cognitive strategies? That is, will students be able to recall content level information presented in a cognitive-behavioral intervention?

5. According to the perceptions of students and teachers, what are the specific components of a cognitive-behavioral intervention that make it likely to be used and what are the qualities of student behavioral responses to anger before and after lesson presentations?

CHAPTER IV

RESULTS

The purpose of the present investigation was to examine the effect of a cognitive-behavioral intervention (i.e., teaching cognitive problem solving skills) and the effect of treatment intensity on inappropriate behavioral responses to anger by middle school students. The effects were identified quantitatively through comparisons among treatment and control groups on the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1988) and the Children's Behavior Checklist - Teacher Version (CBCL; Achenbach, 1991). Interviews with the students and teachers provided a social validation component. With standardized instruments, I identified teacher and student perceptions about how students manage anger (i.e., internally or externally) so that comparisons could be made between the treatment and control groups on pretest, posttest, and follow-up measures. Through interviews, I gathered social validation information that delineated students' and teachers' perceptions about the curriculum lessons, including perceived effectiveness, strengths and weaknesses of the program, and possible changes for improvement. Additionally, descriptive information was collected through the use of recall tests to measure students' retention of the curriculum strategies. The following questions guided the research:

1. What effect will training students, who exhibit problems responding appropriately to anger, to use a cognitive-behavioral intervention have on their behavioral responses to angry feelings?

2. Will different treatment intensities produce different effects on behavioral responses to anger in students who exhibit problems responding in socially acceptable ways?

3. Will students maintain treatment effects?

4. What effect will training students to use a cognitive-behavioral intervention have on their foundational knowledge about cognitive strategies? That is, will students be able to recall content level information presented in a cognitive-behavioral intervention?

5. According to the perceptions of students and teachers, what are the specific components of a cognitive-behavioral intervention that make it likely to be used and what are the qualities of student behavioral responses to anger before and after lesson presentations?

To answer these questions, three groups were compared. Students in Group A received a cognitive-behavioral intervention (see Appendix D) that was administered over a 10-week period. The first 5 weeks consisted of two lessons each week and weeks 6-10 consisted of weekly practice sessions designed to increase the use of problem-solving skills. Group B consisted of students who received the same treatment package in weeks 1-5, but did not receive practice lessons in weeks 6-10. With this variation between groups, the effect of treatment intensity was assessed. The remainder of the students were assigned to a no-treatment control group that did not receive the cognitive-behavioral training. The control component allowed evaluation of the effects of the cognitive-behavioral intervention through comparisons with each treatment group. The results of the three groups on the STAXI and CBCL were statistically examined to compare the effects of group on middle school students' anger control and expression.

This chapter reports the results of the statistical and descriptive analyses of the data and the results of the social validation component (i.e., interviews). Additionally, methods used to ensure reliability of instructional procedures are described, and demographic data and statistical analyses of pretest data are presented to demonstrate initial equivalency of the intervention groups. Finally, the statistical models are explained, and the results of the data analyses are examined.

Reliability of Instructional Procedures

Procedures were implemented to evaluate reliability of instruction throughout the investigation. Because the research was conducted in three schools, it was necessary to ensure that instructional content and procedures for the two treatment groups was consistent across classrooms and research sites. Six classroom teachers were trained to present the scripted curriculum lessons so that all the students received the same exposure to the content material. The teachers attended an hour-long training session at their respective school sites conducted by the principal investigator. The teachers were given curriculum copies prior to the training so that they could familiarize themselves with the material and to formulate questions for clarification. Training consisted of introducing each of the lessons, discussing each of the activities in detail, and answering questions to ensure that the teachers were familiar with the concepts and learning strategies. Each teacher met with the primary investigator on at least a weekly basis to discuss problems and receive clarifications. Additionally, the primary investigator was available by phone to assist with any unforeseen problems.

Twenty percent (n=3) of the lessons in each treatment classroom were observed by two Research Assistants (RAs) who were University of Florida graduate students in Education to evaluate treatment fidelity. The RAs were instructed to mark checklists (see Appendix E) corresponding to the specific lesson observed. The checklists consisted of 5 observable behaviors (e.g., lesson activities, presentation materials) from each lesson. Through the observations, the RAs indicated that lesson components were or were not completely delivered to the treatment groups. Lessons two, six, and nine were chosen randomly to be observed in all treatment classrooms. Finally, the teachers were debriefed following each unobserved lesson (i.e., lessons 1, 3, 4, 5, 7, 8, and 10) to determine to what extent students were exposed to essentially the same program content throughout the investigation. The debriefing consisted of asking the teachers if they conducted specific activities during each lesson and marking the corresponding checklists which consisted of 5 teaching behaviors. The teachers reported that the unobserved lesson presentations ranged from 50 to 65 minutes, with the exception of a treatment group B teacher taking 90 minutes to complete one of the lessons. All of the teachers stated that they presented all curriculum material to their students.

Lessons two, six, and nine were observed in each of the 6 treatment classrooms using a checklist containing 5 observable behaviors (see Appendix E). Lessons during the observations ranged from 45 to 65 minutes. Additionally, the teachers were asked about the appropriateness of the reading levels in the curriculum for their students. All of the teachers reported that the content was written at an appropriate reading level. To compute a percentage that would represent the fidelity of treatment for each classroom, a variation of the formula suggested by Tawney and Gast (1984) was used:

$$\frac{\text{Observed behaviors}}{\text{Observed behaviors} + \text{Unobserved behaviors}} \times 100 = \text{Reliability Percentage}$$

For the combined 3 observations conducted with each of the treatment teachers (i.e., 18 total observations), reliability percentages were 100, except for one teacher who scored 93.75. That is, one of the teachers engaged in fourteen of the fifteen checklist activities. It should also be noted that one of the non practice lesson (i.e., 10-lessons) teachers separated lessons into two presentation sessions after the fourth lesson, resulting in four lessons per week during weeks 3 to 5. Nonetheless, all content material was covered during each week of intervention.

Statistical Analysis of Data

Statistical analyses were conducted to determine if the groups were equivalent before treatment and to compare the effects of the intervention on student responses to anger. This section presents demographic data on participant age and race. Additionally, results of the statistical analyses of the dependent measures of instructional effectiveness are examined to compare the effects of group on responses to anger by middle school students.

Equivalency of Intervention Groups

Several analyses were conducted to determine if there were any preexisting differences between the two treatment and control groups. Table 5 provides a summary of the distribution of students into groups (i.e., practice lesson, non-practice, control) by age. Results revealed no significant differences between groups ($\underline{X}^2 = 6.224$, 8, $\underline{p} = .662$) with respect to age. Table 6 provides a summary of the distribution of students into groups by race. For race, the chi-square ($\underline{X}^2$) analysis also revealed no significant differences between groups ($\underline{X}^2 = 2.392$, 4, $\underline{p} = .664$).

Finally, the means of pretest scores on the subscales of the two pretests (i.e., CBCL, STAXI) for all groups were calculated. The data were compared across the three groups using the ANOVA approach. Table 7 and 8 present the means, standard deviations, and the statistical significance for the pretest administrations of the CBCL and STAXI. Examination of these data revealed no significant differences among the three groups on the pretest measures from the STAXI, nor on 6 of 10 subscales from the CBCL. The practice lesson group was rated significantly higher than the non practice and control groups on the withdrawn, anxious/depressed, and internalizing subscales, while the non practice lesson group scored significantly lower than the other groups on the social problems subscale at $\underline{p} < .05$. With a Bonferroni correction, resulting in $\alpha_c = .0050$ for the CBCL, no subscales were significantly different at pretest.

Table 5

Distribution of Students by Age

Treatment Group	Age 11	12	13	14	15	Total
Practice Lesson	2	6	9	4	1	22
Non-Practice	2	3	7	5	2	19
Control	5	2	9	2	1	19

Table 6

Distribution of Students by Race

Treatment Group	Race White	Black	Hispanic	American Indian/ Multi-racial
Practice Lesson	9	12	1	0
Non-Practice	4	13	2	0
Control	5	12	2	0

Table 7

Comparison of Pretest Means on the CBCL Subscales by Group

	Treatment Group				
	Practice (N = 22)	Non-Practice (N = 17)	Control (N = 19)		
Scale	Mean (SD)	Mean (SD)	Mean (SD)	F (df = 2)	p
Withdrawn	3.86 (3.28)	1.88 (1.93)	2.11 (2.35)	3.41	.0402
Somatic Complaints	1.05 (2.10)	0.59 (1.23)	0.68 (1.45)	0.41	.6626
Anxious/ Depressed	6.50 (6.52)	3.00 (2.47)	2.84 (4.07)	3.74	.0299
Social Problems	5.86 (5.06)	2.29 (2.14)	4.21 (2.74)	4.50	.0155
Thought Problems	1.05 (2.13)	0.12 (0.33)	0.84 (1.38)	1.84	.1688
Attention Problems	14.82 (9.03)	10.53 (5.76)	9.16 (7.70)	2.99	.0585
Delinquent Behavior	3.82 (2.75)	2.41 (2.45)	3.47 (3.52)	1.14	.3260
Aggression	20.73 (14.34)	15.06 (12.82)	16.37 (11.47)	1.04	.3587
Internalizing	11.41 (10.15)	5.47 (4.42)	5.63 (6.19)	4.06	.0226
Externalizing	24.55 (16.31)	17.47 (14.98)	19.84 (14.55)	1.09	.3443

Note. SD = standard deviation; df = degrees of freedom.

Table 8

Comparison of Pretest Means on the STAXI Subscales by Group

Scale	Treatment Group Practice (N = 22) Mean (SD)	Non-Practice (N = 19) Mean (SD)	Control (N = 19) Mean (SD)	F (df = 2)	p
State Anger	15.41 (8.29)	16.05 (8.82)	15.84 (7.96)	0.03	.9686
Trait Anger	21.41 (9.12)	18.58 (8.32)	21.42 (6.91)	0.77	.4665
Angry Temperament	8.55 (3.89)	7.68 (4.23)	8.32 (3.28)	0.27	.7634
Angry Reaction	8.18 (3.80)	7.32 (3.40)	8.16 (3.06)	0.40	.6735
Anger-In	16.77 (6.16)	13.84 (5.96)	17.05 (4.16)	2.00	.1449
Anger-Out	20.23 (6.44)	16.68 (6.86)	20.52 (4.31)	2.46	.0948
Anger Control	18.82 (5.33)	17.89 (7.07)	18.79 (5.09)	0.16	.8558
Anger Expression	34.18 (10.59)	28.63 (8.80)	34.79 (7.56)	2.66	.0789

Note. SD = standard deviation; df = degrees of freedom.

Table 9

Comparison of Pretest, Posttest and Follow-Up Means on the CBCL Subscales by Group

	Treatment Group								
	Practice (N = 22)			Non-Practice (N = 17)			Control (N = 19)		
Scale	Pre (SD)	Post (SD)	Follow (SD)	Pre (SD)	Post (SD)	Follow (SD)	Pre (SD)	Post (SD)	Follow (SD)
Withdrawn	3.86 (3.28)	3.95 (3.33)	4.18 (3.42)	1.88 (1.93)	2.18 (2.30)	3.29 (2.95)	2.11 (2.35)	2.16 (2.57)	2.21 (2.66)
Somatic Complaints	1.05 (2.10)	0.91 (1.77)	0.95 (1.94)	0.59 (1.23)	0.88 (1.45)	1.18 (1.70)	0.68 (1.45)	0.58 (2.09)	0.58 (2.09)
Anxious/ Depressed	6.50 (6.52)	6.45 (6.46)	6.77 (6.33)	3.00 (2.47)	4.35 (6.24)	4.82 (6.39)	2.84 (4.07)	3.11 (3.59)	3.05 (3.50)
Social Problems	5.86 (5.06)	5.55 (4.73)	5.82 (4.60)	2.29 (2.14)	2.47 (2.92)	2.94 (3.07)	4.21 (2.74)	4.95 (3.01)	4.84 (3.45)
Thought Problems	1.05 (2.13)	1.05 (2.13)	0.86 (1.78)	0.12 (0.33)	0.24 (0.56)	0.41 (0.71)	0.84 (1.38)	0.84 (1.57)	0.84 (1.57)
Attention Problems	14.82 (9.03)	13.73 (8.03)	15.73 (8.69)	10.53 (5.76)	9.59 (5.81)	11.82 (6.50)	9.16 (7.70)	10.74 (8.41)	10.58 (8.89)
Delinquent Behavior	3.82 (2.75)	3.55 (2.67)	3.73 (2.59)	2.41 (2.45)	2.12 (2.18)	2.12 (2.12)	3.47 (3.52)	4.11 (3.53)	3.79 (3.68)
Aggression	20.73 (14.34)	14.64 (8.79)	18.68 (12.01)	15.06 (12.82)	10.06 (7.42)	14.71 (11.20)	16.37 (11.47)	22.32 (13.64)	20.47 (14.79)
Internalizing	11.41 (10.15)	11.32 (9.76)	11.91 (9.72)	5.47 (4.42)	7.41 (8.55)	9.29 (9.07)	5.63 (6.19)	5.84 (6.66)	5.84 (6.74)
Externalizing	24.55 (16.31)	18.18 (10.78)	22.41 (13.96)	17.47 (14.98)	12.18 (9.17)	16.82 (12.78)	19.84 (14.55)	26.42 (16.37)	24.26 (17.74)

Note. SD = standard deviation.

Table 10

Comparison of Pretest, Posttest, and Follow-Up Means on STAXI Subscales by Group

	Treatment Group								
	Practice (N = 22)			Non-Practice (N = 19)			Control (N = 19)		
Scale	Pre (SD)	Post (SD)	Follow (SD)	Pre (SD)	Post (SD)	Follow (SD)	Pre (SD)	Post (SD)	Follow (SD)
State Anger	15.41 (8.29)	11.05 (2.84)	15.36 (9.40)	16.05 (8.82)	11.74 (3.96)	13.42 (7.71)	15.84 (7.96)	17.11 (10.08)	16.11 (10.29)
Trait Anger	21.41 (9.12)	16.82 (6.33)	20.27 (8.97)	18.58 (8.32)	15.26 (5.50)	18.42 (7.73)	21.42 (6.91)	24.58 (8.95)	24.32 (9.87)
Angry Temperament	8.55 (3.89)	6.05 (1.84)	7.41 (3.79)	7.68 (4.23)	6.11 (2.85)	6.74 (3.21)	8.32 (3.28)	9.79 (4.45)	9.32 (4.37)
Angry Reaction	8.18 (3.80)	7.32 (3.51)	9.00 (4.02)	7.32 (3.40)	5.95 (2.15)	7.89 (3.57)	8.16 (3.06)	9.63 (3.32)	9.89 (3.97)
Anger-In	16.77 (6.16)	15.32 (5.58)	15.32 (5.79)	13.84 (5.96)	14.05 (4.78)	14.95 (6.07)	17.05 (4.16)	17.74 (3.94)	17.00 (5.23)
Anger-Out	20.23 (6.44)	17.50 (4.83)	17.95 (5.31)	16.68 (6.86)	14.53 (5.47)	16.21 (6.15)	20.53 (4.31)	21.26 (5.90)	20.26 (6.35)
Anger Control	18.82 (5.33)	27.64 (3.49)	23.59 (5.63)	17.89 (7.07)	22.42 (6.98)	20.79 (6.06)	18.79 (5.09)	19.95 (5.36)	18.63 (5.66)
Anger Expression	34.18 (10.59)	21.18 (9.55)	25.68 (10.91)	28.63 (8.80)	22.16 (9.05)	26.37 (10.50)	34.79 (7.56)	35.05 (9.94)	34.63 (8.19)

Note. SD = standard deviation.

Descriptive Summary of Pretest to Posttest Data

Tables 9 and 10 present statistics describing the central tendency and variability of the data on the CBCL and the STAXI collected in this investigation by group.

Inferential Analysis of the Data

Several statistical analyses of the dependent measures of instructional effectiveness were examined to compare the effects of the cognitive-behavioral curriculum with and without practice lessons and no instruction on the behavioral responses to anger by middle school students as measured by student responses on the STAXI and teacher ratings on the CBCL. In addition, analyses were conducted to determine if effects were maintained for four weeks after the conclusion of the treatment. Analyses of Covariance (ANCOVA), using the pretest as the covariate, were used to determine the effects of group on the students anger control and expression as measured on subscales of the STAXI and CBCL at posttest and follow-up. Then, planned orthogonal contrasts were conducted to identify differences between (1) students receiving a cognitive-behavioral curriculum and those receiving no such instruction and (2) students receiving a cognitive-behavioral curriculum with additional practice and students who received the curriculum without practice lessons. Additionally, a Bonferroni correction was conducted to obtain more conservative alpha levels for the student self-report and the behavior checklist completed by the teachers. The new alpha levels were $\alpha_c = .0050$ for the CBCL and $\alpha_c = .0063$ for the STAXI.

Results of the ANCOVA for posttest. The analysis of covariance (ANCOVA) approach was chosen to examine between group differences at posttest. Because no significant differences were found among groups on the subscales, the pretests were appropriate to use as covariates in the ANCOVA. Thus, the ANCOVA approach was appropriate for all of the subscales of the STAXI and 6 of the 10 subscales on the CBCL (somatic complaints, thought problems, attention problems, delinquent behavior, aggression, and externalizing behaviors). Additionally, the ANCOVA approach was used to identify differences for the other 4 subscales from the CBCL (withdrawn behavior, anxious/depressed behavior, social problems, and internalizing behaviors) at posttest because the Bonferroni correction resulted in no significant differences at pretest, but caution is warranted.

Tables 11 through 18 summarize the results of the ANCOVA for the following measures of anger expression from the STAXI at posttest: state anger, trait anger, angry temperament, angry reaction, anger-out, anger control, anger expression and anger-in subscales. These analyses indicated significant effects of group for all of the dependent measures of behavioral responses to anger, except for the anger-in subscale (refer to Table 18). The independent variable for these analyses was group (practice, non practice, or control). The covariate was the corresponding pretest.

Tables 19 through 28 present the results of the ANCOVA for the following measures of anger expression from the CBCL: aggression, externalizing behaviors, withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent, and internalizing subscales. These analyses indicated significant effects of group for the dependent measures of aggression and externalizing behaviors. Conversely, the analyses indicated no effect for group on the other 8 subscales. The independent variable for these analyses was group (practice, non practice, or control). The covariate was the corresponding pretest.

Results of the ANCOVA for follow-up. The analysis of covariance (ANCOVA) approach was also selected as the method to examine between group differences at follow-up for the subscales of both the STAXI and CBCL. Although the ANCOVA approach is more appropriate to identify differences for the subscales on which preliminary analyses indicated no differences of performance on the pretests across the intervention groups, it still offers the ability to distinguish differences when the pretest indicates differences prior to intervention. Thus, the pretests were used as covariates in the ANCOVA.

Table 29 summarizes the results of the ANCOVA for the anger expression subscale of the STAXI. This analysis indicated significant effects of group for the dependent measures of student behavioral responses. The independent variable for this analysis was group (practice, non practice, or control). The covariate was the corresponding pretest.

Tables 30 through 46 summarize the results of the ANCOVA for the remaining subscales on the STAXI and the CBCL subscales. The independent variable for each of these analyses was group (practice, non practice, or control). The covariate was the corresponding pretest. The analyses of self and teacher reports indicated no effect for group on these behaviors.

Table 11

Summary of Analysis of Covariance for State Anger (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
State Anger pretest	1	296.22	8.37	.0054*
Group (practice, non practice, control)	2	424.89	6.00	.0043*
Error	56	1982.21		

*Significant at the p < .0063 level.

Table 12

Summary of Analysis of Covariance for Trait Anger (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Trait Anger pretest	1	1299.72	47.70	.0001*
Group (practice, non practice, control)	2	768.09	14.09	.0001*
Error	56	1525.87		

*Significant at the p < .0063 level.

Table 13

Summary of Analysis of Covariance for Angry Temperament (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Angry Temperament pretest	1	205.94	31.34	.0001*
Group (practice, non practice, control)	2	173.69	13.22	.0001*
Error	56	367.96		

*Significant at the p < .0063 level.

Table 14

Summary of Analysis of Covariance for Angry Reaction (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Angry Reaction pretest	1	272.14	56.86	.0001*
Group (practice, non practice, control)	2	101.63	10.62	.0001*
Error	56	268.00		

*Significant at the p < .0063 level.

Table 15

Summary of Analysis of Covariance for Anger-Out (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Anger Out pretest	1	584.15	30.58	.0001*
Group (practice, non practice, control)	2	221.72	5.80	.0051*
Error	56	1069.77		

*Significant at the p < .0063 level.

Table 16

Summary of Analysis of Covariance for Anger Control (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Anger Control pretest	1	321.91	13.59	.0005*
Group (practice, non practice, control)	2	622.16	13.13	.0001*
Error	56	1326.76		

*Significant at the p < .0063 level.

Table 17

Summary of Analysis of Covariance for Anger Expression (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Anger Expression pretest	1	2381.56	47.92	.0001*
Group (practice, non practice, control)	2	1858.72	18.70	.0001*
Error	56	2783.19		

*Significant at the $p < .0063$ level.

Table 18

Summary of Analysis of Covariance for Anger-In (STAXI Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Anger-In pretest	1	242.08	12.29	.0009*
Group (practice, non practice, control)	2	73.10	1.86	.1659
Error	56	1103.32		

*Significant at the $p < .0063$ level.

Table 19

Summary of Analysis of Covariance for Aggression (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Aggression pretest	1	4143.52	130.80	.0001*
Group (practice, non practice, control)	2	1528.49	24.13	.0001*
Error	54	1710.62		

*Significant at the p < .0050 level.

Table 20

Summary of Analysis of Covariance for Externalizing Behaviors (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Externalizing Behaviors pretest	1	6340.76	151.00	.0001*
Group (practice, non practice, control)	2	1844.69	21.96	.0001*
Error	54	2267.62		

*Significant at the p < .0050 level.

Table 21

Summary of Analysis of Covariance for Withdrawn Behavior (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Withdrawn pretest	1	315.25	141.04	.0001*
Group (practice, non practice, control)	2	0.57	0.13	.8804
Error	54	120.70		

*Significant at the p < .0050 level.

Table 22

Summary of Analysis of Covariance for Somatic Complaints (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Somatic Complaints pretest	1	138.76	189.94	.0001*
Group (practice, non practice, control)	2	1.91	1.31	.2783
Error	54	39.45		

*Significant at the p < .0050 level.

Table 23

Summary of Analysis of Covariance for Anxious/Depressed (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Anxious/Depressed pretest	1	972.93	69.11	.0001*
Group (practice, non practice, control)	2	12.59	0.45	.6418
Error	54	760.19		

*Significant at the p < .0050 level.

Table 24

Summary of Analysis of Covariance for Social Problems (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Social Problems pretest	1	573.23	158.41	.0001*
Group (practice, non practice, control)	2	8.76	1.21	.3060
Error	54	195.41		

*Significant at the p < .0050 level.

Table 25

Summary of Analysis of Covariance for Thought Problems (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Thought Problems pretest	1	122.91	306.88	.0001*
Group (practice, non practice, control)	2	0.09	0.12	.8899
Error	54	21.63		

*Significant at the p < .0050 level.

Table 26

Summary of Analysis of Covariance for Attention Problems (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Attention Problems pretest	1	2626.28	261.72	.0001*
Group (practice, non practice, control)	2	59.92	2.99	.0589
Error	54	541.88		

*Significant at the p < .0050 level.

Table 27

Summary of Analysis of Covariance for Delinquent Behavior (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Delinquent Behavior pretest	1	340.37	169.19	.0001*
Group (practice, non practice, control)	2	12.14	3.02	.0573
Error	54	108.64		

*Significant at the p < .0050 level.

Table 28

Summary of Analysis of Covariance for Internalizing Behaviors (CBCL Subscale) at Posttest

Source of Variation	df	Sum of Squares	F	p
Internalizing Behaviors pretest	1	2454.90	87.53	.0001*
Group (practice, non practice, control)	2	28.31	0.50	.6065
Error	54	1514.52		

*Significant at the p < .0050 level.

Table 29

Summary of Analysis of Covariance for Anger Expression (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Anger Expression pretest	1	1815.34	26.24	.0001*
Group (practice, non practice, control)	2	749.57	5.42	.0017*
Error	56	3874.27		

*Significant at the p < .0063 level.

Table 30

Summary of Analysis of Covariance for State Anger (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
State Anger pretest	1	1592.72	27.54	.0001*
Group (practice, non practice, control)	2	87.70	0.76	.4733
Error	56	3238.80		

*Significant at the p < .0063 level.

Table 31

Summary of Analysis of Covariance for Trait Anger (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Trait Anger pretest	1	1626.23	31.50	.0001*
Group (practice, non practice, control)	2	210.79	2.04	.1394
Error	56	2890.87		

*Significant at the p < .0063 level.

Table 32

Summary of Analysis of Covariance for Angry Temperament (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Angry Temperament pretest	1	245.74	23.51	.0001*
Group (practice, non practice, control)	2	59.07	2.83	.0677
Error	56	585.37		

*Significant at the p < .0063 level.

Table 33

Summary of Analysis of Covariance for Angry Reaction (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Angry Reaction pretest	1	337.39	36.60	.0001*
Group (practice, non practice, control)	2	19.26	1.04	.3585
Error	56	516.19		

*Significant at the p < .0063 level.

Table 34

Summary of Analysis of Covariance for Anger-In (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Anger-In pretest	1	51.03	1.58	.2140
Group (practice, non practice, control)	2	31.85	0.49	.6133
Error	56	1808.69		

*Significant at the p < .0063 level.

Table 35

Summary of Analysis of Covariance for Anger Control (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Anger Control pretest	1	168.60	5.44	.0233
Group (practice, non practice, control)	2	250.62	4.05	.0228
Error	56	1734.30		

*Significant at the p < .0063 level.

Table 36

Summary of Analysis of Covariance for Anger-Out (STAXI Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Anger Out pretest	1	363.55	12.44	.0008*
Group (practice, non practice, control)	2	67.31	1.15	.3234
Error	56	1636.25		

*Significant at the p < .0063 level.

Table 37

Summary of Analysis of Covariance for Withdrawn Behavior (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Withdrawn pretest	1	327.68	96.02	.0001*
Group (practice, non practice, control)	2	15.61	2.29	.1112
Error	54	184.28		

*Significant at the p < .0050 level.

Table 38

Summary of Analysis of Covariance for Somatic Complaints (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Somatic Complaints pretest	1	152.34	159.08	.0001*
Group (practice, non practice, control)	2	5.58	2.91	.0629
Error	54	51.71		

*Significant at the p < .0050 level.

Table 39

Summary of Analysis of Covariance for Anxious/Depressed (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Anxious/Depressed pretest	1	927.18	63.53	.0001*
Group (practice, non practice, control)	2	24.35	0.83	.4397
Error	54	788.10		

*Significant at the p < .0050 level.

Table 40

Summary of Analysis of Covariance for Social Problems (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Social Problems pretest	1	553.93	116.46	.0001*
Group (practice, non practice, control)	2	1.98	0.21	.8126
Error	54	256.81		

*Significant at the p < .0050 level.

Table 41

Summary of Analysis of Covariance for Thought Problems (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Thought Problems pretest	1	93.61	197.22	.0001*
Group (practice, non practice, control)	2	0.99	1.05	.3580
Error	54	25.63		

*Significant at the p < .0050 level.

Table 42

Summary of Analysis of Covariance for Attention Problems (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Attention Problems pretest	1	2334.44	93.31	.0001*
Group (practice, non practice, control)	2	1.59	0.03	.9688
Error	54	1351.03		

*Significant at the p < .0050 level.

Table 43

Summary of Analysis of Covariance for Delinquent Behavior (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Delinquent Behavior pretest	1	281.67	87.61	.0001*
Group (practice, non practice, control)	2	6.50	1.01	.3705
Error	54	173.62		

*Significant at the p < .0050 level.

Table 44

Summary of Analysis of Covariance for Aggression (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Aggression pretest	1	5707.33	94.43	.0001*
Group (practice, non practice, control)	2	319.63	2.64	.0802
Error	54	3263.71		

*Significant at the p < .0050 level.

Table 45

Summary of Analysis of Covariance for Internalizing Behaviors (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Internalizing Behaviors pretest	1	2463.04	80.47	.0001*
Group (practice, non practice, control)	2	121.96	1.99	.1463
Error	54	1652.83		

*Significant at the p < .0050 level.

Table 46

Summary of Analysis of Covariance for Externalizing Behaviors (CBCL Subscale) at Follow-up

Source of Variation	df	Sum of Squares	F	p
Externalizing Behaviors pretest	1	8048.87	100.55	.0001*
Group (practice, non practice, control)	2	394.49	2.46	.0946
Error	54	4322.60		

*Significant at the p < .0050 level.

Results of the planned contrasts. A Bonferroni correction was conducted to obtain more conservative alpha levels for the student self-report and the behavior checklist completed by the teachers for the planned contrasts because 3 additional comparisons were conducted. The new alpha levels were $\alpha_c = .0017$ for the CBCL and $\alpha_c = .0025$ for the STAXI. Planned comparisons are appropriate when they emanate from hypotheses identified before the investigation and when strong theoretical and empirical foundations exist for specifying the hypotheses (Shavelson, 1988). Each comparison must provide nonoverlapping information from the other comparisons. That is, they must be independent from one another. Under these conditions, the t-test is used to examine the hypotheses statistically. In this investigation, three contrasts were planned and conducted for each dependent variable. Comparisons were made between each of the comparison groups and the control and a third comparison was conducted to compare the two treatment groups.

The first contrast compared the average posttest performance of the treatment groups (i.e., practice, non practice) to the posttest performance of the students in the no treatment, control group. Results of these analyses indicated a significant difference between the performance of the students in both the practice lesson and non practice lesson treatment groups when compared to the performance of the control group on the STAXI subscales of trait anger ($t = 4.74$, $p = 0.0001$; $t = 4.48$, $p = 0.0001$), angry temperament ($t = 4.80$, $p = 0.0001$; $t = 4.04$, $p = 0.0002$), angry reaction ($t = 3.40$, $p = 0.0013$; $t = 4.42$, $p = 0.0001$), and anger expression ($t = 6.09$ $p = 0.0001$; $t = 3.60$, $p =$

0.0007). The only exceptions were found on the state anger ($t = 3.19$, $p = 0.0023$), anger control ($t = 5.04$, $p = 0.0001$), and anger-out ($t = 3.20$, $p = 0.0023$) subscales in which only the practice lesson group differed significantly different from the control. With regards to the CBCL, the results indicated a significant difference between the performance of the students in both treatment groups and those in the control group on the subscales of aggression ($t = 5.94$, $p = 0.0001$; $t = 6.39$, $p = 0.0001$) and externalizing behavior ($t = 5.63$, $p = 0.0001$; $t = 6.15$, $p = 0.0001$). There were no significant differences on the STAXI subscale of anger-in or any of the other CBCL subscales.

The second cluster of contrasts compared the average posttest performance of students in the practice lesson group to students in the non practice lesson group. Results of these analyses indicated a significant difference on anger control ($t = 3.17$, $p = 0.0025$) between the two treatment groups. That is, the practice lesson group average score was significantly higher than the average score for the non practice lesson group on that subscale. No other significant differences were identified on the subscales of the STAXI or the CBCL.

The next group of contrasts compared the average follow-up performance of the two treatment groups (i.e., practice, non practice) to the posttest performance of the students in the no treatment, control group. Results of these analyses indicated no significant differences between the average performance of the students in the non practice treatment group when compared to the average performance of the control group on the STAXI subscales. The analyses only indicated a significant difference between the practice lesson and control groups on the subscale of anger expression (t = 3.29, p = 0.0017). No significant differences were identified for any of the other subscales of the STAXI, and none of the subscales from the CBCL had any identified differences.

The final contrasts compared the average follow-up performance of students in the practice lesson group to students in the non practice group. There were no significant differences on any of the dependent measures between these two groups at follow-up.

Recall Tests

Recall tests were administered at the end of each week of curriculum presentations during weeks 1 through 5 to demonstrate the students' abilities to learn curriculum material. Each test consisted of questions derived from the two lessons presented that week. The students were given each test following the second lesson of the week. Results of the test administrations by group and by school are presented in Tables 47 and 48. Individual scores ranged from 0 to 100, and average scores per test ranged from 63.1 to 80.7 for the treatment groups and 60.7 to 84.6 for the schools. No significant differences were identified between the two treatment groups (t = 0.81, p = 0.4400) or among the three participating schools (F = 1.52, p = 0.2582).

Social Validation Investigation Strategies

The social validation strategies included teacher and student interview. Interviews were employed for detailed insight into program components that were successful and parts that required revision or deletion, as well as to assist with identifying characteristics that may increase the likelihood that students would respond favorably to the curriculum lessons.

Table 47

Results of the Recall Tests by Group

Test	Descriptive Statistics Mean % Correct	Standard Deviation	Median
	Practice Lesson (N = 22)		
Lessons 1 & 2	68.5	33.2	71.4
Lessons 3 & 4	80.7	23.4	87.5
Lessons 5 & 6	77.7	20.3	75.0
Lessons 7 & 8	75.6	25.2	87.5
Lessons 9 & 10	77.0	26.4	87.5
	Non-practice (N = 19)		
Lessons 1 & 2	63.1	32.2	71.4
Lessons 3 & 4	77.3	24.7	87.5
Lessons 5 & 6	75.8	28.5	87.5
Lessons 7 & 8	75.0	29.2	87.5
Lessons 9 & 10	75.0	17.7	87.5

Table 48

Results of the Recall Tests by School

Test	Descriptive Statistics		
	Mean % Correct	Standard Deviation	Median
	School 1 (N = 22)		
Lessons 1 & 2	69.5	30.9	71.4
Lessons 3 & 4	84.6	16.3	87.5
Lessons 5 & 6	76.7	20.0	75.0
Lessons 7 & 8	76.1	21.7	87.5
Lessons 9 & 10	75.0	20.2	87.5
	School 2 (N = 15)		
Lessons 1 & 2	68.1	30.9	71.4
Lessons 3 & 4	79.2	26.3	87.5
Lessons 5 & 6	82.5	20.6	87.5
Lessons 7 & 8	76.9	28.8	87.5
Lessons 9 & 10	77.3	18.4	87.5
	School 3 (N = 23)		
Lessons 1 & 2	60.7	36.9	71.4
Lessons 3 & 4	74.0	27.7	87.5
Lessons 5 & 6	73.1	29.7	75.0
Lessons 7 & 8	71.4	35.1	87.5
Lessons 9 & 10	76.8	36.4	87.5

Through interviews, I investigated student and teacher perceptions about the cognitive-behavioral curriculum. Both teachers and students were asked questions about how the students in the treatment groups, including themselves, responded behaviorally to anger and about the curriculum lessons, including the effect the lessons had on student responses to anger. During November through January, 1998-1999, two RAs and I interviewed 9 students and 6 teachers about the cognitive-behavioral curriculum. The interviews were conducted at the school sites and lasted approximately 30 minutes each. I structured the interview protocols (see Appendix B) to collect information on (1) student and teacher perceptions about the cognitive-behavioral curriculum, including strengths, weaknesses, and effectiveness and (2) students' behavioral responses to anger before and after lesson presentations.

Perceptions about the Cognitive-Behavioral Curriculum

Generally, the teachers and students responded favorably to the curriculum lessons and activities (e.g., role plays). The teachers reported that the lessons covered what they considered to be important content to assist their students with expressing their anger in more appropriate ways and that the topics were covered in sufficient detail to introduce the students to the concepts of anger, communication, and problem solving. For example, when asked about the strengths of the program, one teacher stated:

> I think that the lessons touched on most of what the students would need to know to act appropriately when they get angry. Not only did they present anger lessons, but they also talked about communication and problem solving which are important things to teach students about. Most of the problems that these students have seem to come from an inability to interact the right way in social situations, so I think it is important that they learn about ways to work and talk with others appropriately.

The teachers also related that student behavior improved as a result of the curriculum and the use of the hassle logs. The teachers noted that their students responded less impulsively in many situations during the 5 or 10 weeks of lesson presentations. For instance, one teacher stated that the fights in her classroom decreased during the intervention and another said:

> My students took more time to think before they acted. They were less likely to act without thinking about the consequences of their actions. Because of that, their behavior got better after the lesson presentations, especially after the problem solving part was introduced. Most of these students haven't been taught how to approach a problem and come up with more than one solution. And to make things worse, they jump at the first thought that comes into their head. When the lessons about problem solving started they were given a way to stop and think through the problem so that they had a better chance of making a good choice.

Unfortunately, one teacher from each treatment group made specific comments about the lack of maintenance for their students. These teachers stated that their students failed to maintain the effects of the curriculum as evidenced through (1) a perceived increase in problem behaviors such as responding to situations with little or no forethought about the consequences of their actions, (2) an increase in defiant behaviors (e.g. refusal to complete classwork, arguing with authority figures), and (3) an increase in threatening and physical behaviors (e.g., fighting, pushing). One teacher commented, "During the lessons, my students' behavior noticeably improved. They got into fewer fights, they talked back less, and they were more likely to complete assignments. The problem was that their behavior quickly returned to old patterns when the lessons stopped." She went on to state that the practice lessons presented during weeks 6 to 10 needed to be continued over a longer period of time and noted that she planned to use refresher lessons after the conclusion of the study. She also suggested that the format of the practice lessons should be more distinctive from one lesson to the next so that the students didn't lose interest and were presented with the same concepts in different ways. By varying these lessons, she felt that the students would be more likely to use them in various situations.

An interesting finding was that 5 of 6 teachers reported that the hassle log (see Appendix F) was the strongest component of the program. They confirmed that the hassle log provided the students with an opportunity to reflect on their action or inaction in specific anger provoking situations. From these reflections, the students were than able to identify behaviors to be used during future interactions, as well as response patterns that proved unsuccessful or unacceptable. Additionally, when students acted appropriately, they were able to self-reinforce their behavior by noting that they were proud of their behavior and that they would use the same behavior in the future. One teacher stated:

> I think the hassle logs were the best part of the program because the students were able to use them immediately after something happened. [The hassle log] gave the students a chance to look at what they did and decide if they acted appropriately. If they did, the log helped them to reinforce their own behavior by marking how they felt about the way they acted. Most of these students don't know how to give themselves a pat on the back, and the hassle log gives them one way to start learning this.

Conversely, she also noted:

> If the student acted inappropriately, he or she was able to look back on what was done and what could be done differently in the future. This was another way for the students to start developing a repertoire of appropriate choices that they could call on in different situations. Where they reacted quickly before, they were more apt to take more time and choose a path that ended in something good rather than disciplinary action from the teacher.

Five out of six of the teachers also reported that the role plays were a strong program component. One stated that she planned to design role plays of her own that could be used to teach other social skills because the students responded in such a positive manner. The teachers remarked that the role play activities kept the students interest high and that participation was increased. The general consensus was that the students were more likely to internalize skills that were presented in ways that maintained attention and that high involvement activities, such as role playing, worked well with their students.

Understandably, teachers were more concerned with behavior at school, thus, they made few references to other environments (e.g., home, mall). Nonetheless, all 6 did note that the problem solving skills could be used in other situations, but 2 of the 6 questioned whether the students would generalize the skills, especially considering that they were not maintaining the skills at school once the lessons were completed.

The students noted both advantages and disadvantages of the program as a whole, but all of those interviewed felt that the training was beneficial for students who had problems dealing with anger. On the one hand, the students noted that the curriculum helped prepare them to solve their problems without always having to go to an adult and to avoid fighting and getting in trouble because they made an inappropriate choice. Although the students responded favorably, they were more critical than the teachers of the program. For instance, 3 of 9, each from a different classroom, said that the lessons got boring at times and indicated that shorter lessons would be better. One of the 6 teachers also noted that the lessons were too long to maintain the students attention, and after the fourth lesson, she split the remaining lessons into smaller segments. Thus she taught four lessons a week as compared to two during weeks 3 to 5.

All of the students also stated that important topics were covered that could help them deal with anger more effectively. For instance, one student at the alternative school stated:

> The lessons helped me to act better. The things I learned are going to help me get outta here so I can go back to my regular school. When somebody messes with me, I used to just get in his face and tell him to back off. Doing that just got me in trouble because we would get in a fight most of the time. Now I try to ignore them or ask why they are messing with me...like when I play basketball and get fouled real hard, I ignore it...

The students also made numerous references to skills (e.g., stop and think, identifying solutions and consequences) that were presented during the lessons that they could use to control their behavior. Additionally, they would make specific references to situations in which they had used the problem solving skills to resolve a problem. For example, one student described an incident on the bus where he identified possible consequences of his actions and decided to ignore another student's behavior to stay out of trouble:

> I have had problems on the bus before. Like, last week, I was sleeping on the way to school and this kid comes over and slaps me in the head. I knew he was just trying to get me to snap, so I just ignored him. I knew if I went back at him, I would probably get in trouble and I don't want to get in trouble.

This specific comment contrasts the statements made by the two teachers who questioned whether the students would generalize the skills to other environments.

Students' Behavioral Responses to Anger

Both the teachers and students were also asked about the ways that students reacted to the lessons and whether they were likely to benefit from the topics. Although they felt that the subject matter was important and that the students often failed to act appropriately in anger provoking situations, they were not always optimistic that the students would use the skills consistently. One teacher stated:

> It's hard to get my students to focus on the consequences of their actions. They just look at the immediate situation and respond based on the first thing that pops into their heads, which often ends up in some type of confrontation. The lessons teach skills that my students can use to problem solve, but their problems go deeper than just lack of skills. They come from home situations where their parents argue and fight all the time, so how are they supposed to react? Plus their parents tell them that they better not take anything off of anyone and to fight somebody if they have to. I just don't know how you can overcome those lessons, especially when they come from parents.

Some of the students were equally pessimistic. For instance one student explained:

> It's not like the students don't know how to act. They know the difference between right and wrong. They know that they'll get in trouble if they act a certain way, but they just don't care. I think the things we learned in the lessons are good, but we already know most of this stuff. If we didn't, it would be good, but we do. I don't think these kids are going to act better because they are told to because they don't want to.

On the other hand, the students and teachers did report that the material should be presented to students with anger control problems because students who didn't exhibit appropriate problem solving and communication skills may not have been exposed to appropriate role models. A number of the teachers felt that school may be the only place to offer exposure to problem solving and communication skills, while most of the students reported about how they would use the strategies, as compared to talking about their peers' reactions to the lesson material.

Summary

The results of the statistical analyses of the data and the social validation information from this investigation have been presented in the previous sections of Chapter 4. Methods used to ensure the reliability of instructional procedures were described and demographic data presented to illustrate initial equivalency of treatment and control groups. The statistical models used to analyze the data were explained, and the results of the data analyses were reported. Results of the data analysis indicated that the students in both treatment groups made significant progress on state anger, trait anger, angry temperament, angry reaction, anger-out, anger control, and anger expression as measured by the STAXI. The treatment groups also improved significantly from pretest to posttest in comparison to the control group with respect to their state anger, trait anger, angry temperament, angry reaction strategies, outward behavioral responses to anger, and anger expression as reported on the STAXI, but only the practice lesson group improved significantly in comparison to the control on the anger control subscale. Additionally, the treatment groups improved significantly from pretest to posttest in comparison to the control group with respect to aggression and externalizing behaviors as noted by their teachers. Finally, at posttest, the practice lesson group average gain was significantly higher than the average gain in the non practice lesson group on the anger control subscale of the STAXI. No other significant differences were identified at posttest.

At follow-up, only the practice lesson group maintained gains which were in the areas of anger control and anger expression as measured on the STAXI. No other significant differences were identified at follow-up.

Chapter 4 concludes with student scores on the recall tests and a description of the social validation component of this investigation. Results indicated that the students were able to recall content material and that students used the hassle logs to address school related problems. The interviews began the process of identifying strengths and weaknesses of the curriculum. The teachers and students reported that the curriculum lessons offered practice with skills (e.g., communication, problem solving) necessary to respond to anger appropriately, that the hassle logs were a strong component, and substantiated findings (e.g., a lack of maintenance following the school break in some areas) from the quantitative analyses of data.

CHAPTER V

SUMMARY AND DISCUSSION

Some professionals argue that violence and aggression in America's public schools is at epidemic proportions, necessitating an immediate, well thought response from educators, parents, community members, concerned citizens, and students (e.g., Hudley, 1994). Lack of discipline, fighting, and violence are consistently ranked by Americans as one of their greatest concerns. In the most recent Phi Delta Kappa/Gallup Poll, Rose and Gallup (1998) found that fighting/violence/gangs and lack of discipline were designated as the 1st and 2nd most serious problems, respectively. Thus, Americans realize that the inability of many youth to control their behavior merits serious attention from educators.

As student violence and aggression become more prevalent in public schools, program design becomes crucial to insure school safety and to increase appropriate student social interactions. Inappropriate responses to anger represent a large segment of the problems faced by school professionals, thus, the solution appears to lie in teaching students how to successfully handle their anger. Moreover, anger inducing situations (e.g., getting fouled on the basketball court, getting teased, not getting your way, having to do something distasteful) often emanate from social interactions and a student's inability to recognize the intent of others (Hudley, 1994). As educators begin the difficult process of identifying effective strategies for students, they must consider factors such as developmental levels, social validity from teachers' and students' perspectives, and efficiency of implementation. Educators must design curricula that meet two separate needs of students: (1) a reduction of inappropriate responses to anger and (2) the presentation of replacement behaviors to interact appropriately with their peers and authority figures, as well as to deal effectively with feelings of anger. If students are expected to decrease their use of inappropriate responses to anger (e.g., fighting, refusing to complete school work, acting impulsively), they must be taught replacement behaviors that can supplant the previous patterns of reacting. Cognitive-behavioral interventions (CBI) represent one choice open to practitioners to provide students with the requisite skills to respond to anger in socially acceptable ways.

A cognitive-behavioral view of anger and aggression emanates from the theory that an indirect relationship exists between provoking events and anger arousal (Novaco, 1979). Although Novaco stated that physical events, such as getting pushed or hit, may precede a behavioral response or nonresponse, he argued that the catalyst for responding often results from people's perceptions about what the circumstances suggest. Thus, angry or aggressive arousal is mediated by underlying cognitions representing appraisals of specific situations (Kendall, Ronan, & Epps, 1991).

Students who experience problems associated with anger arousal and subsequent inappropriate behavioral responses can benefit from a cognitive-behavioral intervention. A cognitive-behavioral approach represents a viable alternative to remediate behavioral deficiencies by teaching skills to respond appropriately in social situations. Cognitive interventions can include information-processing mechanisms and problem solving skills to generate socially acceptable alternative actions (Rubin, Bream, & Rose-Krasnor, 1991). As part of this approach, social interaction is described as goal-directed behavior and social problem solving is regarded as the process for achieving one's social goals. Thus, researchers and practitioners must focus their efforts on developing treatment packages that alter the cognitive biases (e.g., misinterpreting the motivations of others) that frequently guide the decision making process of adolescents who react inappropriately to anger. Adolescents who tend to react inappropriately during social situations must be taught to understand, identify, and control anger in themselves (e.g., through the use of relaxation techniques), to effectively communicate with others, and to develop problem solving skills to resolve conflicts effectively and appropriately, as opposed to using socially unacceptable methods (e.g., fighting, throwing a temper tantrum, destroying property).

The purpose of this investigation was to analyze the effect of teaching adolescent students a cognitive-behavioral intervention and the effect of treatment intensity on inappropriate behavioral responses to anger. Two treatment groups were exposed to the same content and activities about anger, communication skills, and problem solving skills. The salient difference between treatment groups was the treatment intensity component. By comparing the results of the practice lesson group (curriculum plus an additional 5 practice lessons) versus no practice (curriculum lessons only), conclusions could be drawn about the effect of treatment intensity on students' behavioral responses to anger. If research substantiates that middle school students can learn problem solving skills and apply them in social situations to increase appropriate responses to anger, teachers are more likely to present them to their students. Furthermore, if the treatment intensity component increases students' ability to respond appropriately, then teachers may choose to continue practice/refresher lessons throughout the school year.

The objectives of this investigation were to answer the following questions:

1. What effect will training students, who exhibit problems responding appropriately to anger, to use a cognitive-behavioral intervention have on their behavioral responses to angry feelings?

2. Will different treatment intensities produce different effects on behavioral responses to anger in students who exhibit problems responding in socially acceptable ways?

3. Will students maintain treatment effects?

4. What effect will training students to use a cognitive-behavioral intervention have on their foundational knowledge about cognitive strategies? That is, will students be able to recall content level information presented in a cognitive-behavioral intervention?

5. According to the perceptions of students and teachers, what are the specific components of a cognitive-behavioral intervention that make it likely to be used and what are the qualities of student behavioral responses to anger before and after lesson presentations?

To answer these questions, three groups were compared. Students in Group A received a cognitive-behavioral intervention (see Appendix D) that was administered over a 10-week period. The first 5 weeks consisted of two lessons each week and weeks 6-10 consisted of weekly practice sessions. Treatment Group B consisted of students who received the same treatment package in weeks 1-5, but did not receive practice lessons in weeks 6-10. The remainder of the students were assigned to a no-treatment control group that did not receive the cognitive-behavioral training program. Six hypotheses regarding middle schoolers' responses to anger and their acquisition of communication and problem solving skills were constructed and tested. Dependent measures of instructional effectiveness (i.e., CBCL, STAXI) were statistically examined to compare the effects of group on the middle school students' anger control and expression.

The six hypotheses were examined in light of the statistical analyses, the results from the recall tests, and social validation strategies described in Chapter IV, and a discussion of the findings and implications of the investigation are presented. Finally, through the examination of interview data, student and teacher perceptions about the cognitive-behavioral curriculum, including strengths, weaknesses, and effectiveness and perceptions about students' behavioral responses to anger before and after the lesson presentations were identified. Limitations of the study are acknowledged, and suggestions for future research are also proposed.

Summary of the Hypotheses and Results

Six hypotheses were constructed to identify the effects of group on student anger control and expression. Additionally, questions regarding students abilities to recall content level information and the strengths and weakness of the program were constructed and answered by (a) administering recall tests with the students and (b) interviewing the teachers and students. The results of the statistical analyses designed to test each hypothesis and the information gathered through the recall test administrations and the interview process are discussed in this section.

Equivalency Data

No significant differences among the groups were identified for race or age. For pretest scores, no significant differences were identified between the groups on any of the STAXI subscales or for 6 out of 10 CBCL subscales. Significant differences were identified for the following CBCL subscales: withdrawn behavior, social problems, anxious/depressed behavior, and internalized behaviors.

Hypothesis 1

There is no significant difference between the two treatment groups and the control group on the STAXI subscales at posttest.

The ANCOVA revealed statistically significant differences between both treatment groups and the control group at posttest for the following STAXI subscales: trait anger, angry temperament, angry reaction, and anger expression. On the state anger, anger-out, and anger control subscales, the analyses indicated that only the practice lesson group differed significantly from the control group. Thus, for the measures of anger from the STAXI where significant differences were identified, rejection of the null hypothesis resulted.

No significant difference was indicated between the treatment and control groups on the anger-in measure or between the non practice and control groups on the state anger, anger-out, and anger control measures, resulting in a failure to reject the null hypothesis.

Hypothesis 2

There is no significant difference between the two treatment groups and the control group on the CBCL subscales at posttest.

The ANCOVA revealed statistically significant differences between both treatment groups and the control group at posttest for the following CBCL subscales: aggression and externalizing behaviors. Thus, for the measures of behavioral responses from the CBCL where significant differences were identified, rejection of the null hypothesis resulted.

No significant differences were indicated between the treatment and control groups on the withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent, and internalizing behavior subscales from the CBCL, resulting in a failure to reject the null hypothesis.

Hypothesis 3

There is no significant difference between the two treatment groups and the control group on the STAXI subscales at follow-up.

The ANCOVA revealed statistically significant differences between the practice lesson group and the control group at follow-up for the anger control subscale of the

STAXI. Thus, for the measure of anger from the STAXI where a significant difference was identified, rejection of the null hypothesis resulted.

No significant differences were indicated between the non practice lesson group and the control on any of the subscales of the STAXI or for the practice lesson group and control on the state anger, trait anger, angry temperament, angry reaction, anger-in, anger-out, and anger expression measures, resulting in a failure to reject the null hypotheses at follow-up.

Hypothesis 4

There is no significant difference between the two treatment groups and the control group on the CBCL subscales at follow-up.

No significant differences were indicated on any of the CBCL subscales at follow-up between students receiving the cognitive-behavioral curriculum (i.e., practice and non practice groups) and those receiving no cognitive-behavioral curriculum. The lack of statistically significant findings resulted in a failure to reject the null hypothesis.

Hypothesis 5

There is no significant difference between Treatment Group A (practice lesson group) and Treatment Group B (non practice lesson group) on the STAXI and CBCL subscales at posttest.

At posttest, a significant difference was indicated between Treatment Group A and Treatment Group B on the anger control subscale of the STAXI. Thus, for this measure of behavioral responses to anger where a significant difference was identified, rejection of the null hypothesis resulted. No other differences were identified on the STAXI or the CBCL; therefore, a failure to reject the null hypotheses for the remaining subscales of both instruments resulted.

Hypothesis 6

There is no significant difference between Treatment Group A (practice lesson group) and Treatment Group B (non practice lesson group) on the STAXI and CBCL subscales at follow-up.

No significant differences were indicated between Treatment Group A and Treatment Group B at follow-up; thus, there was a failure to reject the null hypothesis.

Recall Test Data

Students will be able to recall content level information from the cognitive-behavioral intervention.

Students in both treatment groups were able to recall approximately 74.6 % of the content level information; therefore, middle school students in this study are capable of recalling content level information from the cognitive-behavioral intervention.

Social Validation

The social validation strategies included teacher and student interview. Specifically, questions posed were (a) what are the specific components of a cognitive-behavioral intervention that make it likely to be used, (b) how effective was the intervention in altering student behavioral responses to anger, and © what are the teacher and student perceptions about student behavioral responses to anger before and after lesson presentations?

For the most part, the teachers and students responded favorably to the curriculum lessons and activities (e.g., role plays). The students and teachers reported that the lessons covered what they considered to be important content and that there was sufficient detail to introduce the students to the concepts of anger, communication, and problem solving. The teachers mainly focused on school behaviors, while the students were more global. That is, the students discussed problem situations that occurred in a number of different settings (e.g., playground, bus, home). Finally, the students tended to be more critical of the perceived effect of the curriculum on student behavior.

Summary

Six hypotheses regarding the anger control and expression of middle school students with anger control problems were tested using statistical analyses, students' abilities to recall content level information from a cognitive-behavioral curriculum, and strengths and weaknesses of the curriculum were identified based on student and teacher perceptions. For posttest administrations of the STAXI, statistically significant differences were identified for the subscales state anger, trait anger, angry temperament, angry reaction, and anger expression for the treatment groups (Groups A and B) relative to the control group. On the anger-out and anger control subscales, only the treatment group that received practice lessons improved significantly in comparison to the control group. Lack of statistically significant posttest differences between those taught a cognitive-behavioral curriculum and those receiving no such instruction were noted for the anger-in subscale. For posttest administrations of the CBCL, statistically significant differences were identified for the aggression and externalizing behaviors subscales for both treatment groups relative to the control. No other significant differences were identified. Additionally, significant differences were indicated between Treatment Group A and Treatment Group B on the anger control subscale of the STAXI at posttest, while no statistically different findings were identified between Group A and Group B on the CBCL subscales.

At the 4-week follow-up administration of the STAXI, the practice lesson group continued to show significant differences in comparison to the control group on measures of anger control and anger expression, while no differences were indicated between the non practice and control groups. No other differences were identified among the groups on the STAXI subscales. No significant differences were indicated on any of the CBCL subscales at follow-up between students receiving the cognitive-behavioral curriculum and those receiving no cognitive-behavioral curriculum. Finally, no differences were indicated between Treatment Group A and Treatment Group B on any of the subscales of the STAXI or CBCL at follow-up.

Student results on the recall tests indicated that middle school students with anger control problems can retain content level information from a cognitive-behavioral curriculum. For the social validation component, both teachers and students generally responded positively about the curriculum. The teachers and students reported that important topics were covered to assist students with responding in socially acceptable ways when dealing with anger and stated that the hassle log was one of the strongest components. Teachers also identified some weaknesses, such as the lack of skill maintenance following the cessation of curriculum presentation.

Discussion

In this section, the findings are discussed about the effect of the curriculum on middle school students' behavioral responses to anger as measured by the STAXI (self-report instrument completed by the students) and the CBCL (teacher ratings of student behavior). The results are also examined in comparison to findings of prior research about anger control and the effect of cognitive-behavioral interventions on students' non-academic behavior (e.g., impulsivity, hyperactivity, aggression). A treatment intensity component was used to investigate the effect of additional practice lessons on student behavioral responses to anger. Next, a social validation component is used to identify the perceptions of students and teachers about the curriculum, including strengths, weaknesses, and effectiveness. Finally, implications for researchers and practitioners are presented.

Differences at posttest and follow-up were evaluated by comparing (a) the average performance of each treatment group (practice and non practice) to the control group and (b) the practice lesson to the non practice lesson group. Comparisons were made by using two instruments, a self-report instrument completed by the students (i.e., STAXI) and a behavior checklist completed by the teachers (i.e., CBCL).

Posttest Results

STAXI. Posttest analyses of the data revealed significant differences for both treatment groups on the state anger, trait anger, angry temperament, angry reaction, and anger expression subscales in comparison to the control. Additionally, significant differences were revealed for the practice lesson group on the anger-out and anger control subscales of the STAXI in comparison to the control group.

The posttest analyses indicated no significant differences on the anger-in subscale of the STAXI among the three groups. While the significant findings indicated that the curriculum was effective in altering external behavioral response patterns, the lack of significant differences for the internal behavior subscales indicates that the curriculum lessons exerted little or no effect on internally directed behaviors (e.g., refusal to talk).

CBCL. Posttest analyses of the data revealed significant improvement for both treatment groups on the aggression and externalizing behaviors subscales of the CBCL. These findings parallel those found for the STAXI.

Posttest analyses indicated no significant differences on the withdrawn, somatic complaints, anxious/depressed, social problems, thought problems, attention problems, delinquent, or internalizing behavior subscales of the CBCL. Findings from the CBCL subscales mirrored the STAXI results.

Summary. Violence and aggression in American schools is a distinct problem that affects and concerns many American citizens (Rose & Gallup, 1998). Many of the situations that result in violent or aggressive behavioral responses by students might have been avoided if students had skills to address anger inducing stimuli. Students who respond to anger with physical or verbal aggression either failed to acquire skills that enable socially acceptable responses or failed to implement appropriate skills in their repertoire. Thus, educators must provide students with opportunities to attain skills that enable appropriate behavioral responses and to execute them when necessary.

The findings from this investigation are consistent with the results of previous research (e.g., Lochman, 1985; Lochman, 1992; Lochman, Coie, Underwood, & Terry, 1993; Lochman & Curry, 1986; Lochman, Curry, Burch, & Lampron, 1984; Lochman & Lampron, 1988; Lochman, Lampron, Gemmer, Harris, & Wyckoff, 1989) which has shown that teaching students cognitive-behavioral skills equips them to respond appropriately (e.g., using effective communication and problem solving skills) when faced with anger inducing stimuli.

The findings suggest that students who have characteristically responded to anger by directing their responses toward other people (i.e., verbal or physical aggression) or objects in the environment (e.g., destroying property) are capable of controlling their behavior when taught skills that assist them with generating appropriate solutions. Moreover, students can be taught skills to aid them with controlling their initial reactions (e.g., controlling impulsive behavior) to anger provoking interactions.

As indicated by pretest scores on the STAXI and CBCL and the interview responses of the students and teachers, many of the students who participated in this investigation experienced difficulty avoiding impulsive reactions and processing social cues accurately. The pretest results of the dependent measures demonstrated that the students reacted impulsively to anger provoking interactions and interview responses indicated that the students failed to interpret social cues appropriately. For instance, a number of the students and teachers related anecdotes about misinterpretation of another's motives leading to an altercation that often got out of control. These findings are consistent with Dodge's (1986) method of explaining different levels of social competence in children and adolescents. Dodge's social information processing model was comprised of five sequential steps: (1) receiving and perceiving social input, (2) interpretation, (3) response search, (4) response decision, and (5) response enactment. According to the proposed model, adolescents approach a given social situation with certain capabilities which predispose them to react in specific ways to a set of social cues. Response patterns to social cues emanate from their processing of the environmental events, including all social information. In most situations, adolescents respond based on subconscious processing of the cues. If adolescents are adept at interpreting social cues, they are more likely to respond in socially acceptable manners and be judged to be socially competent. On the other hand, if they experience difficulty in any stage of processing, the likelihood increases that they will respond with inappropriate strategies, including the possibility of aggressive behavior. Aggressive response patterns were substantiated by the teachers and students on the pretest, while posttest findings indicated that the students were more adept at responding appropriately to anger provoking situations. The cognitive-behavioral curriculum used in this investigation addressed the Dodge social information processing model by teaching students relaxation, communication, and problem solving skills so that social interactions were interpreted accurately; solutions were generated, evaluated, and implemented; and appropriate behaviors were provided to replace inappropriate response patterns. Student self-report scores and teacher ratings substantiated that the students were responding appropriately more frequently and less impulsively and/or aggressively. Thus, the students were responding to anger by using more effective methods.

To enable students to deal with anger more effectively, strategies should be used that provide them with appropriate skills. The results of this investigation substantiated that students with anger control problems can be taught to implement socially acceptable behavioral responses when faced with anger inducing situations. Specifically, when taught anger control, communication, and problem solving skills, the students who participated in this study were able to control their externally directed behaviors (i.e., physical and verbal aggression), as indicated by the results on student self-reports (i.e., STAXI) and teacher behavior checklists (i.e., CBCL). It should also be noted that no such effect was found for internally directed behaviors, such as social withdrawal, which raises questions about the efficacy of cognitive-behavioral interventions with withdrawn types of behavior. The fact that the participants in this study came from school populations (i.e., students with special needs and those served in alternative placements) who traditionally exhibit externally directed behaviors may indicate that fewer students with internalizing behavioral patterns participated in the study. Therefore, further cognitive-behavioral research should be conducted with students exhibiting internalized behaviors such as somatic complaints (e.g., stomach aches), anxious/depressed behavior, or not talking about one's feelings.

The findings for the internalizing subscales of the STAXI and CBCL were not totally unexpected. The curriculum was not specifically directed toward altering internalized response patterns (e.g., an inability to build or maintain relationships, development of physical symptoms or fears, thought problems, attention problems, general pervasive moods of unhappiness), and failed to influence these patterns substantively. The skills (e.g., relaxation, communication, problem solving) addressed problems (e.g., impulsivity) that frequently resulted in outward response strategies (i.e., physical or verbal aggression); therefore, internal responses to anger remained unaffected at both posttest and follow-up.

There are a number of other questions that emanate from the findings of this investigation. Because there are numerous curriculum components that may have contributed to the changes that resulted for the treatment students, it is difficult to identify the salient ones. For instance, a number of different skills (e.g., anger control, communication, problem solving) were introduced which may have influenced student behavioral responses. It is conceivable that students equipped with more effective communication skills are likely to respond in more socially acceptable ways than some of their peers, while students who have more sophisticated problem solving skills may be apt to choose more effective behaviors. Furthermore, students who demonstrate high levels of anger control skills may be capable of restraining themselves better than their peers who experience anger control deficits.

The hassle log was another element that may have assisted students with altering response patterns. It is unclear whether the hassle log influenced outcomes because it served the purpose of providing teachers with a teaching tool or providing students with a self-reflection opportunity. Future investigators will have to isolate the different variables to delineate which ones are necessary to produce a significant effect efficiently. Equal emphasis should be placed on identifying the factors that increase maintenance and generalization of skills. Planning for maintenance includes strategies such as using booster sessions, reviewing learned skills, and embedding explicit instruction into lesson formats. Designing curricula that provide opportunities for generalization include teaching behaviors that are naturally reinforced by adults and peers, using collaborative strategies across teachers and other educators, and including appropriate training techniques (e.g., multiple examples, multiple response options, multiple settings). That is, researchers must specify appropriate teaching strategies to ensure that educators can carefully plan for maintenance and generalization by including the relevant components.

Maintenance of Effects

A 4-week follow-up administration of the dependent measures indicated continued effects of the cognitive-behavioral curriculum but showed that the effects were maintained only for the practice lesson group in comparison to the control. The practice lesson group continued to differ significantly from the control group on the anger control and anger expression subscales of the STAXI. Follow-up analyses indicated no significant differences for any of the CBCL subscales. It should be noted that there was a discrepancy among the two treatment groups in time between termination of the curriculum and administration of the instruments. The follow-up administration was given 4 weeks after the practice lesson group completed the program while the non practice lesson group completed the curriculum 9 weeks earlier which may have contributed to the findings.

Nonetheless, there is an implication that the effects of the curriculum may have started to dissipate. The non practice lesson group experienced greater erosion of effects than the practice lesson group indicating that increased practice may be an important component of a cognitive-behavioral curriculum for adolescent students, as noted by numerous researchers (e.g., Heinicke, 1988; Kazdin, 1987; Lamminmäki et al., 1997; Lochman, 1985; Longabaugh, Wirtz, Beattie, Noel, & Stout, 1995; Perri, Nezu, Patti, & McCann, 1989; Vockell & Mihail, 1993). The finding that treatment students (i.e., practice lesson participants) continued to differ significantly on a measure of anger control suggests that the curriculum provided students with the motivation to attempt to maintain control of their behavior over a longer period of time. That is, in comparison to their control counterparts, the practice lesson group was actively attempting to control their behavior as indicated by scores on the anger control subscale at follow-up.

Questions about the maintenance of effects emanate from the differences among the 3 groups. Because there was a continued effect for the practice lesson group (curriculum plus 5 additional practice lessons) and none for the non practice group (curriculum only), questions are raised about the differences identified from the statistical analyses. The practice lesson group continued to differ significantly from the control on 1 subscale from the STAXI (anger control), but the effects for the non practice lesson group disappeared by the 9-week follow-up administration. Why were there enduring effects for the practice lesson group as compared to the control, but not for the non practice group? There is a possibility that the effects for the practice lesson group may have disappeared if a longer time period had elapsed such as passed for the nonpractice group. It is equally conceivable that the practice lessons helped, but that further exposure is required to inculcate lasting effects. Are the 5 lessons over 5 weeks sufficient or should they be extended over a longer period of time, such as the entire school year? Although the practice lessons were taught weekly during this investigation, another time frame (e.g., monthly, twice a semester) may be adequate. As researchers continue to identify the salient variables and how to structure them, treatment intensity will emerge as a component that should be carefully designed to increase skill acquisition.

In this investigation, the treatment intensity element consisted of the practice lesson group receiving an additional 5 lessons over 5 weeks which provided increased practice of the problem solving skills in a structured classroom setting. The supplementary lessons provided for practicing skills and the use of other curricular components during formal lessons, such as the hassle log. Further investigations should be designed to delineate the effect of specific components (e.g., treatment intensity) so that decisions can be made about what activities and content should be included to maximize educational benefit for students.

Treatment Intensity

To design treatment programs that are economical in time and resources, investigators must compare the effect of differing treatment durations and/or exposures.

Vockell and Mihail (1993) noted that automaticity of skills requires practice and reinforcement beyond the point of initial mastery. Robinson et al. (in press) noted the importance of identifying salient components that affect change in student behavior, such as treatment intensity; therefore, one component of this investigation was to compare the practice lesson (curriculum plus 5 additional lessons) to the non practice lesson (curriculum only) group.

Comparisons between the practice (Treatment Group A) and non practice (Treatment Group B) lesson groups indicated that treatment intensity is an important component to consider when designing programs intended to alter student behavioral response patterns. At posttest, a significant difference was indicated between Treatment Group A and Treatment Group B on the anger control subscale of the STAXI, while no significant differences were revealed on the subscales of the CBCL.

At follow-up, no significant differences were revealed between the practice and nonpractice lesson groups. Nonetheless, there were significant differences between the practice lesson group and the control, while none were identified between the non practice and control at follow-up which indicates that effects have dissipated and may continue to disappear for the practice lesson group as well. The results found at posttest among the 3 groups and the lack of significant results at follow-up between the two treatment groups suggest that treatment intensity requires further investigation to delineate whether it is a salient component. Additionally, significant differences were identified for the STAXI (student self-report instrument) alone at follow-up which warrants that the findings be interpreted cautiously. The teacher behavior checklist indicated no significant differences at posttest or follow-up between the two treatment groups; therefore, further research is necessary to replicate the student self-report findings and to substantiate or refute the findings by using another measurement device (e.g., teacher behavior checklist).

Although previous research has indicated that treatment intensity is an integral component to ensure maintenance, the results of this investigation are unclear. That is, the treatment intensity findings neither refute nor substantiate the influence of increased intervention exposure. Moreover, the way to structure increased exposure remains uncertain. Although this study started the process of answering questions about treatment intensity, many questions remain unanswered. For instance, should the focus of curriculum design be on the number of lessons and minutes of exposure to the intervention or should the length of time (e.g., number of weeks or months) be the focal point? In the present study, both exposure to the intervention (i.e., the number of minutes) and length of time (i.e., 5 weeks versus 10 weeks) were incorporated which confuses interpretation. It is difficult to determine which factor was integral or if both are necessary. Furthermore, future investigators will have to delineate how increased exposure should be planned. To ensure that maintenance occurs, practitioners need information about the frequency of practice sessions, as well as their format. For example, should the practice lessons be presented on a weekly basis or a monthly one; should they incorporate all skills or highlight certain ones? Are practice lessons really necessary? It is also important to decide whether to provide practice lessons in which skills are reviewed in more depth or boosters which may occur less frequently and tend to review fewer concepts with less intensity. Subsequent research will have to identify lesson structures. Social validation strategies were used in this investigation to identify student and teacher perceptions about the curriculum and its effectiveness and such methods begin the task of delineating components to be included in future research endeavors.

Social Validation Component

The interviews conducted with the students and teachers seemed to substantiate many of the significant findings from the quantitative analyses and began the process of distinguishing strengths and weaknesses of the curriculum. It is important to identify the strengths and weaknesses of any intervention so that appropriate changes can be made to increase the likelihood of implementation by practitioners. In the case of a curriculum, it is important to identify strengths and weaknesses as perceived by teachers and students so that teachers are more inclined to use it.

Generally, both the teachers and students responded favorably to the curriculum lessons and activities, and overall, they noted that student behavior improved as a result of the lesson presentations and the use of the hassle logs. The teachers noted that their students responded less impulsively in many situations during the 5 or 10 weeks of lesson presentations. For instance, one teacher stated that the fights in her classroom decreased during the intervention. As reported by the teachers and students, strengths of the curriculum included the role-plays, content coverage, and additional practice lessons. They noted that a particularly strong element was the hassle log.

Hassle logs (see Appendix F) were completed by students to self-reflect about anger provoking incidents and their behavioral responses. The teachers reported that they asked for volunteers to share incidents from their hassle logs to assist with concept presentations (e.g., problem solving skill components). The majority of the hassle logs referred to incidents that occurred during school hours or immediately before or after school. Additionally, many of the students reported that filling out the hassle logs helped them to choose appropriate behavioral responses. The indication is that applying the skills to problems faced by the students in their everyday lives represents an integral part of the curriculum and the self-reflection component provided opportunities to identify appropriate response patterns for future situations.

Although student reports suggested generalization of learned skills, teachers were less optimistic that the students would use the skills consistently. Nonetheless, a number of students reported using problem solving and calming techniques in other environments (e.g., cafeteria, bus, basketball court). Teachers also noted a lack of maintenance for their students as indicated by an increase in externalizing problem behaviors following cessation of curriculum presentations. The interview data, along with the quantitative analyses, hold definite implications for practitioners and researchers.

Implications

Teachers/Curriculum Specialists

The implications for teachers and curriculum specialists include designing curricula that rely on examples approximating or paralleling actual problems faced by students in school and other settings. Whalen, Henker, and Hinshaw (1985) delineated a comprehensive list of variables associated with CBI (e.g., specificity or generality of behavioral domains included; degree of involvement of parents, teachers, and peers; quality of purposeful training for maintenance and generalization) which should be considered during the design phase. The current investigation included the hassle log which represents a specific attempt to include purposeful training for generalization which was substantiated by the quantitative analyses and interview responses. The treatment intensity component represented purposeful training for maintenance which was also substantiated by the findings in this investigation. Increased opportunities to practice skills in nonthreatening environments increases the probability that skills will be maintained and generalized (Vockell & Mihail, 1993). Thus, maintenance and generalization must be carefully planned for during the design phase of curricula which will facilitate implementation.

Students

Students can benefit from a cognitive-behavioral curriculum designed to remediate inappropriate anger expression. Teaching students problem solving skills enables them to address anger from situations that cannot be predicted. Students are taught how to think as compared to what to think. By acquiring requisite skills that can be applied in the presence of various anger inducing stimuli, students can identify appropriate behavioral responses and implement them.

Students who exhibit problems responding appropriately to anger may have deficits in a number of different areas; therefore, it is important to identify domains of need to be remediated. For instance, if students are unable to recognize anger in themselves, then it is important to introduce concepts related to anger (e.g., physical signs, levels of anger) to increase their awareness and strategies for decreasing angry feelings (e.g., calming techniques, relaxation methods). Moreover, students should be introduced to approaches, such as problem solving, for addressing novel conditions that induce anger so that they can respond appropriately with minimal assistance from others (e.g., parents, teachers). Independent functioning should be the goal of educational programs, whether academic or social skills, and the ability to problem solve represents one method to accomplish this objective. Finally, many students misperceive the intentions of others during social interactions (Dodge, 1986). The cognitive-behavioral intervention used in this investigation included lesson components (e.g., effective communication skills) designed to address social interaction deficiencies, and the students reported that the curriculum increased their awareness of the motivations of others so that they were able to respond in socially acceptable ways more frequently.

Researchers

For researchers, the implications point to future research and as noted by Robinson et al. (in press), the need for systematic and ongoing research to critique CBI techniques and to identify salient components that produce change in student behavior. When focusing on anger related problems, future researchers could use (1) the same instruments (i.e., STAXI, CBCL) used in this investigation to replicate or refute these results and/or (2) the same or similar curriculum components. Replication of research will continue the process of delineating curricular components (e.g., length of treatment, hassle log) necessary for sustaining and generalizing results. Although many investigators have contributed to the CBI research base, few seem to have worked toward creating a systematic body of research, the notable exception being Lochman and his colleagues. An organized framework includes using (1) the same instruments whenever possible, (2) using similar interventions to replicate efforts and identify salient variables, and (3) designing studies from a theoretical foundation while relying on sound research techniques (e.g. using control groups, reporting necessary statistics and information).

As noted by Whalen, Henker, and Hinshaw (1985), the process of designing effective cognitive-behavioral curricula calls for additional research into the critical components of interventions such as specificity or generality of behavioral domains included; degree of involvement of parents, teachers, and peers; and quality of purposeful training for maintenance and generalization. To identify these components investigators need to describe their research efforts in enough detail for others to make informed decisions about the results of a study and the conclusions. Because there are a number of curricular components (e.g., communication skills, hassle log, problem solving skills) that may have contributed to the changes identified in the treatment students, future investigators should further delineate the elements necessary to engender appropriate change.

Although the current investigation answered questions about the efficacy of a cognitive-behavioral curriculum for reducing externally directed behaviors (i.e., physical and verbal aggression), little is known about the effect such a curriculum would have on internally directed behaviors (e.g., social withdrawal). Participants in this study came from school populations (i.e., students with special needs and those served in alternative placements) who traditionally exhibit externally directed behaviors which may indicate that fewer students with internalizing behavioral patterns participated in the study. Therefore, further cognitive-behavioral research should be conducted with students exhibiting internalized behaviors such as somatic complaints (e.g., stomach aches), anxious/depressed behavior, or not talking about one's feelings to substantiate or refute the efficacy of cognitive-behavioral curricula on internal behavioral patterns.

It is equally important that investigators identify the curricular components that facilitate generalization and maintenance of skills. Planning for generalization of skills includes teaching behaviors that are naturally reinforced by adults and peers, using collaborative strategies across teachers and other educators, and including appropriate training techniques (e.g., multiple examples, multiple response options, multiple settings). Thus, researchers must specify appropriate teaching strategies to ensure that educators can carefully plan for generalization by including the relevant components.

Similar methods should be used to plan for maintenance of learned skills. Investigators need to begin the process of delineating the elements that facilitate maintenance. Techniques to plan for maintenance of learned skills include using booster sessions, reviewing skills, and embedding explicit instruction into the lesson formats of other subjects (e.g., social studies, literature). For example, a social studies lesson may include topics from a daily newspaper regarding topics that touch on anger and the way it is handled, providing teachers with discussion points about true-to-life situations. Even though techniques exist to maximize the effects of treatment over a period of time, questions remain.

A number of questions regarding maintenance of learned skills need to be delineated and answered using rigorous investigative methods. For instance, what is the effect of booster or practice lessons taught once a week, once a month, or bi-monthly? What level of detail is necessary to design booster or practice lessons that are effective? What is the effect of using hassle logs (i.e., a self-reflection tool) on the maintenance of learned skills? Although this investigation began the process of answering questions related to maintenance, additional questions need to be answered before maintenance effects are established.

Previous researchers (e.g., Lochman, 1992; Lochman, et al., 1984) have indicated that treatment intensity is an integral component to ensure maintenance. The findings from the present study, however, neither refute nor substantiate the influence of increased intervention exposure. Many questions remain, such as should the focus of curriculum design be on the number of lessons and minutes of exposure to the intervention or should the length of time (e.g., number of weeks or months) be the focal point? In the present study, both exposure to the intervention (i.e., the number of minutes) and length of time (i.e., 5 weeks versus 10 weeks) were incorporated which confused interpretation. It is difficult to determine which factor was integral or if both are necessary. Furthermore, future investigators will have to delineate how increased exposure should be planned. To ensure that maintenance occurs, practitioners need information about the frequency of practice sessions, as well as their format.

Limitations of the Present Investigation

This investigation has distinct limitations. First, it should be noted that it was not possible to randomize the assignment of students in the 3 treatment groups. Logistical constraints such as school configuration and student placement in classrooms prevented random selection of individual students. To address this issue, one classroom from each of the 3 schools was randomly assigned to one of the 3 treatment groups, resulting in one classroom from each school serving in each group (i.e., practice, nonpractice, control). Subsequently, the make-up of the three groups was equivalent for race, age, and pretest scores.

Because repeated testing using the same instruments may affect internal validity, number of test administrations was curtailed. Internal validity refers to a measurement device (e.g., STAXI, CBCL) accurately measuring what it is reported to assess (Shavelson, 1988). Only three test administrations were used so that the students and teachers would not become overburdened with completing the same instrument repeatedly. A limitation arose in the fact that there was a discrepancy in the length of time between administrations of the instruments for the two treatment groups. At posttest, the practice lesson group had just completed the curriculum, while the nonpractice group finished the curriculum 5 weeks earlier. Moreover, an additional administration or increasing the follow-up from 4 weeks to a longer time period would have provided stronger evidence for the maintenance of appropriate behavioral responses or may have indicated that more practice lessons were warranted because curriculum effects continued to dissipate over time. Nonetheless, significant effects for both treatment groups (i.e., practice, nonpractice) were identified in comparison to the control. These findings suggest that the curriculum affected the anger expression of the treatment students because the groups were not significantly different at pretest. At follow-up, there was also a discrepancy. Four weeks elapsed between the administration of the instruments and termination of the curriculum for the practice lesson group while 9 weeks passed for the nonpractice lesson group; therefore, conclusions regarding the maintenance of effects must be interpreted cautiously. Nevertheless, at posttest which was 4 weeks after the nonpractice lesson group finished the curriculum and at the follow-up administration for the practice lesson group significant effects were identified in comparison to the control which indicates that maintenance was occurring at 4 weeks. But, there is uncertainty about what components (e.g., lesson topics, practice lessons) contributed to maintenance.

Treatment fidelity also posed a problem. Issues such as teacher enthusiasm, modifications to the curriculum (e.g., breaking lessons into smaller units), and student reactions were difficult to control. To evaluate treatment fidelity, lesson observations were conducted for 3 lessons with each treatment teacher and only one teacher missed one activity out of 15. Additionally, the teachers were debriefed about the remaining lessons. From the observations and debriefings, it was concluded that the students essentially received the same exposure to the curriculum. Furthermore, significant differences were identified for the practice and nonpractice lesson groups at posttest in comparison to the control indicating that the curriculum had an effect.

Another limitation was lack of observational data. Both the STAXI and CBCL rely on perceptions. Questions can be posed about whether the instruments are measuring actual student behavior. The STAXI (Spielberger, 1988) and CBCL (Achenbach & Edelbrock, 1983) were chosen because they have been used in numerous investigations, and researchers have repeatedly reported validity and reliability scores that substantiate that they measure behavioral responses to anger, as well as differentiate between internalizing and externalizing types of reactions.

Time represented another limitation. Ten cognitive-behavioral lessons with 5 practice lessons may have been insufficient to produce results that were maintained. Additional practice lessons spread over more than 5 weeks may have served to strengthen the skill acquisition so that the practice lesson group showed stronger improvement in comparison to the non practice lesson group. Furthermore, increasing the number of practice lessons may have reinforced the skills that influenced appropriate response patterns reported at posttest, resulting in stronger maintenance for students taught the cognitive-behavioral curriculum.

A final limitation of this investigation is the grade levels of the subjects. Only middle school students participated in the curriculum. Thus, the results of this investigation may not be generalized to older or younger students without systematic replication of the procedures with elementary or high school populations.

Summary

This investigation was conducted to examine the effect of teaching adolescent students a cognitive-behavioral intervention and the effect of treatment intensity on inappropriate behavioral responses to anger by middle school students. Results indicated that students taught a cognitive-behavioral curriculum made significant improvement on measures of behavioral responses related to externalizing type behaviors (e.g., defiance, arguing, fighting). Results also indicated that additional practice with problem solving significantly affected anger control. Analyses conducted at follow-up indicated that effects were maintained only on the measure of anger expression from the STAXI. All other effects dissipated by the 4-week follow-up. Additionally, at follow-up, all significant differences between the practice lesson (curriculum plus additional 5 lessons) and non practice lesson (curriculum only) groups had disappeared.

These findings hold several implications for practitioners and researchers. To identify children and youth for whom CBI strategies are effective calls for additional research into the critical components of interventions, including clearly specified training procedures, complete subject descriptors, and reliable and valid dependent measures by which to evaluate behavior change. Teachers should understand that problem solving and communication skills are important skills that enable students to effectively and appropriately deal with anger and social interactions and should understand that practice of communication and problem solving skills in a meaningful context may be beneficial to their students, especially in the areas of maintenance and generalization. Teachers should also be aware that attempts to decrease inappropriate behaviors must be accompanied by providing opportunities to acquire replacement behaviors.

Researchers should design strategies to identify salient components of teaching techniques and should replicate previous research to substantiate or refute findings, as well as to develop a foundational body of research. Subsequent researchers should also systematically vary components to allow comparisons that continue the process of component identification. Cognitive-behavioral curricula represent a useful tool to provide students with necessary skills for responding to anger appropriately. Researchers and practitioners should work together to delineate the most efficient and effective methods for disseminating the essential skills to students.

APPENDIX A

HUMAN SUBJECTS FORM

UNIVERSITY OF
FLORIDA

Institutional Review Board

98A Psychology Bldg.
PO Box 112250
Gainesville, FL 32611-2250
Phone/Fax: (352) 392-0433
E-mail: irb2@ufl.edu
http://nervm.nerdc.ufl.edu/~ufirb

DATE: 08-Sep-98

TO: Mr. Thomas Rowand Robinson
Box 117050
Campus

FROM: C. Michael Levy, Chair
University of Florida
Institutional Review Board

SUBJECT: **Approval of Project #** 1998 - 601

TITLE: Determining the Effect of Teaching Adolescent Students a Cognitive Behavioral Intervention and the Effects of Treatment Intensity on Behavioral Responses to Anger and Interpersonal Conflict

FUNDING: FL Ed Res Council College Incentive Fund

I am pleased to advise you that the University of Florida Institutional Review Board has recommended approval of this project. Based on its review of your protocol, the UFIRB determined that this research presents no more than minimal risk to participants. Given your protocol, it is essential that you obtain signed documentation of informed consent from each participant over 18 years of age, and from the parent or legal guardian of each participant under 18 years of age. When it is feasible, you should obtain signatures from both parents. Enclosed is the dated, IRB-approved informed consent to be used when recruiting participants for the research.

If you wish to make any changes to this protocol, you must disclose your plans before you implement them so that the Board can assess their impact on your project. In addition, you must report to the Board any unexpected complications arising from the project that affect your participants.

If you have not completed this project by 02-Sep-99, please telephone our office (392-0433) and we will tell you how to obtain a renewal.

It is important that you keep your Department Chair informed about the status of this research project.

CML/h2

Cc: Vice President for Research
Dr. Stephen Smith

Equal Opportunity / Affirmative Action Institution

APPENDIX B

INTERVIEW PROTOCOLS

Student Interview

Interviewer Name: ____________________ Date: __________

Grade of participant: ________________ Time Started: __________

Race: __________ Gender: __________ Time Ended: __________

School: __________________________

1. Tell me what kind of situations make you angry.

    What happens to you that lets you know you are angry?

    Does anything else happen to you physically?

    Is there a particular time or place that it usually happens?

    How does it start?

    Define the term messing with you?

2. What do you do when you get angry? How do you react?

    What does that accomplish?

    Does that work? Does it solve the problem?

        Why do you think it works or doesn't work?

3. Give me an example of a recent situation when you got angry.
   (Think about something that happened recently or the last time you got angry.)

    What happened? Tell me how it started.

    When did you knowe you were angry, or did you know you were angry?

    What did you do?

    What happened after you reacted?

    Would you do the same thing again? (Why or why not?)

Now I'm going to ak you some questions about the anger reduction lessons.

4. What did you learn from the lessons?

    What did you learn about how to deal with anger?

    Before the lessons, did you do things differently? (If yes, how?)

5. Do you think you will continue to use the skills from the lessons?

    If yes, which skills? Where? In what situations?

6. What were some useful things taught during the lessons?

    Why are they useful? How did that help you?

8. What parts of the lessons were not useful?

    Why weren't they useful?

    What would you change to make them more useful, to improve the curriculum?

9. In general, were the anger reduction lessons a good experience for you?
    If yes, how?
    If no, why not?

    Do you use the skills outside of school? When and where?

    What skills dou you think you need to work on?

10. Is there anything else you would like to add?

Faculty Interview

Interviewer Name: ______________________ Date: ___________

Grade taught or position: __________________ Time Started: ___________

Gender: ___________ Time Ended: ___________

School: _____________________________

I want to ask some general questions about the conflicts students have and strategies they use to resolve them.

1. What general categories do the student's problems or conflicts fall under?

2. Do you think most of the students know when they're angry?

3. What kinds of situations tend to arouse anger? (who, what?)
    a. Is there a particular time of the day that problems are more likely to occur than other times? (describe what's happening at that time)
    b. Is there a particular place where problems are more likely to occur? (describe the environment/conditions)

4. What do they do when they're angry? How do they normally resolve disagreements or conflicts?

Now I'm going to ask questions about the Anger Reduction Program

5. What did the students learn from the Anger Reduction Program?

6. Do you think they will use the skills presented in the lessons?

7. What skills are they likely to use those skills? In what situations (with whom, where) do you think they are likely to use them?

8. What changes could be made to make the lessons more useful? What material would you change?

9. What specific things about the lessons did you find useful (teacher friendly)?

    a. what makes them useful?

10. What parts of the lessons were not useful?

    a. what would have made them more useful to you?

11. What kinds of students do you think are most likely to benefit from this? (characteristics of students)

12. What are the characteristics of the students who you think are most likely to respond to this program?

13. Why do you think that is?

14. What can be done to teach these skills to students who lack these characteristics?

15. What would be the best way to get them to respond?

16. Overall, was the Anger Reduction Program a good addition to your curriculum?
    [if yes]How has it helped or been successful?
    [if no] Why not?

APPENDIX C

RECALL TESTS

CBI Curriculum

Lessons 1 & 2

Student Curriculum Evaluation

What grade are you in? _____

1. What is escalation?

Give an example of escalation

2. List two levels of anger. ______________________________

____

3. List three calming down techniques.

____

____

____

CBI Curriculum

Lessons 3 & 4

Student Curriculum Evaluation

What grade are you in? ____

1. List something that makes you frustrated.

____

____

____

2. List three physical signs of anger.

____

____

____

3. List four problem solving steps.

____

____

____

____

CBI Curriculum

Lessons 5 & 6

Student Curriculum Evaluation

What grade are you in? ____

1. List the three main parts of listening.

____

____

____

2. When people don't listen, they do one or more of these things:

____

____

____

3. List two ineffective communication methods.

____

____

4. List two effective communication methods.

____

____

Lessons 7 & 8

Student Curriculum Evaluation

What grade are you in? _____

1. Define *Goal* in your own words.

2. Define *Obstacle* in your own words.

3. List as many Problem Solving Steps as you can (there are 6).

____

____

____

____

____

____

CBI Curriculum

Lessons 9 & 10

Student Curriculum Evaluation

What grade are you in? ____

1. What is the first step in problem solving? ____________________

   (a) generate possible solutions
   (b) evaluate solutions
   (c) define the problem

2. When a solution does not work, I should do the following: ______

   (a) use self-reinforcement
   (b) use self-coping statements

3. List as many Problem Solving Steps as you can (there are 6).

   ____

   ____

   ____

   ____

   ____

   ____

APPENDIX D

REPRESENTATIVE SAMPLE OF SCRIPTED LESSONS

Anger Control Curriculum

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Lesson One

Understanding Anger

1 Understanding Anger

TEACHER PAGE

Objectives:

1. To help students understand escalation in anger. How particular types of escalators make anger worse.
2. To make students aware that anger is an emotion of several levels that can and should be controlled. You cannot hope to resolve a conflict if you are enraged.

Time: One class period (approx. 45-50 minutes).

TEACHER PAGE

Definitions

Directions:

1. Show the "Definitions" Overhead.
2. Ask the students to follow along as you read the definitions aloud.
3. Ask the students if they can come up with other examples.
4. Let the students know that they will use the definitions for other exercises.
5. Answer any questions.

Escalation: The way conflicts get worse. Some common anger escalators are listed below.

Bullying : shouting, accusing, name-calling, ridiculing, threatening, etc.

example: (shouting) You're such a jerk! Quit messing with my personal life!

Exaggeration: Saying things like "always, never, every time" instead of sticking to the facts.

example: You're always in a bad mood, I'm never like that.

Digging up the past: Bringing up old problems or old conflicts.

example: Maybe I wouldn't be like this if it weren't for that time you told on me.

Personal Attack: Attacking the other person's personality, taking cheap shots or laughing at a person, rather than sticking to the conflict issues.

example: Why are you so sensitive? It's not that big a deal, get over it.

OVERHEAD

Definitions

Escalation: The way conflicts get worse. Some common anger escalators are listed below.

Bullying : shouting, accusing, name-calling, ridiculing, threatening, etc.

example: **(shouting) You're such a jerk! Quit messing with my personal life!**

***Exaggeration*:** Saying things like "always, never, every time" instead of sticking to the facts.

example: **You're always in a bad mood, I'm never like that.**

***Digging up the past*:** Bringing up old problems or old conflicts.

example: **Maybe I wouldn't be like this if it weren't for that time you told on me.**

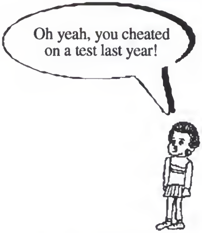
***Personal Attack*:** Attacking the other person's personality, taking cheap shots or laughing at a person, rather than sticking to the conflict issues.

example: **Why are you so sensitive? It's not that big a deal, get over it.**

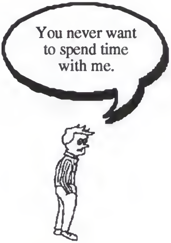
TEACHER PAGE

Identifying Escalation

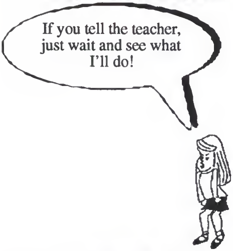
Directions:
1. **Ask the students to turn to Student Page 1, "Identifying Escalation."**
2. **Read the following student directions aloud:**
   "Using the terms from the definitions page, write the escalator used by each character. It is easy to see why statements such as these might "set someone off", but it is not so easy to avoid such problems. The trick is to identify these escalators and not overreact to them while remaining calm enough not to escalate the conflict yourself."
3. **Discuss choices with the class.**


Oh yeah, you cheated on a test last year!

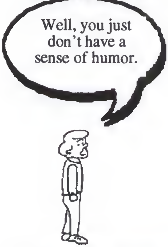
Digging up the past


You never want to spend time with me.

Exaggeration


If you tell the teacher, just wait and see what I'll do!

Bullying

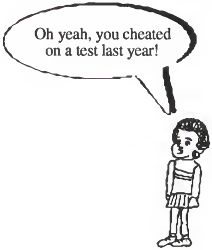

Well, you just don't have a sense of humor.

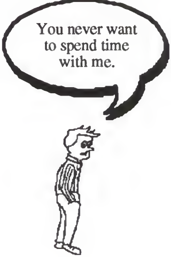
Personal attack

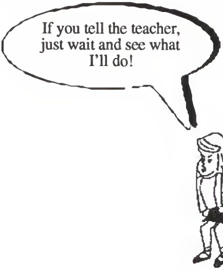
STUDENT PAGE 1

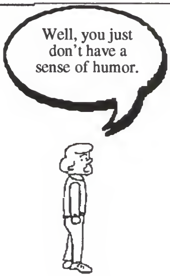
Identifying Escalation

Directions: Using the terms from the "Definitions" Overhead, write the escalator used by each character. It is easy to see why statements such as these might "set someone off", but it is not so easy to avoid such problems. The trick is to identify these escalators and not overreact to them while remaining calm enough not to escalate the conflict yourself.


Oh yeah, you cheated on a test last year!


You never want to spend time with me.


If you tell the teacher, just wait and see what I'll do!


Well, you just don't have a sense of humor.

TEACHER PAGE

Levels of Anger

Directions:

1. **Show the "Levels of Anger" Overhead.**
2. **Explain the different levels of anger and how they relate to each other.**
3. **Read the examples provided below to your students.**
4. **Ask optional discussion questions provided below.**

Levels of anger: Being, **irritated**, **angry**, or **enraged.** The levels of anger are like an anger speedometer -- irritated is a relatively slow level, while enraged is dangerously fast.

Sometimes anger doesn't always build upon itself as it increases. You can go right from being calm to becoming angry or even enraged very quickly. Just like when a race car driver hits the gas real hard it goes from slow to fast very quickly.

Examples of things that may make you irritated:

- When a friend is ignoring you while you're saying something important.
- When your kid brother totally interrupts you when you're talking to your parents about school.

Examples of things that may make you angry:

- When someone laughs at you for doing something clutsy.
- When someone calls you a name in front of others.

Examples of things that may make you enraged:

- When someone calls you a name and shoves you.
- When someone insults someone in your family.

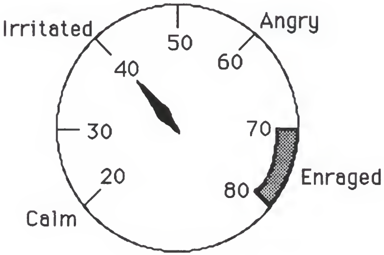
DISCUSSION:

1. **Tell me about a time that made you irritated. How did that happen?**
2. **Tell me about a time that made you angry. How did that happen?**
3. **Tell me about a time that made you enraged. How did that happen?**

OVERHEAD

Levels of Anger

- **Levels of anger**: Being, **irritated, angry**, or **enraged.**
    - The levels of anger are like an anger speedometer -- irritated is a relatively slow level, while enraged is dangerously fast.
    - Sometimes anger doesn't always build upon itself as it increases.
    - You can go right from being calm to becoming angry or even enraged very quickly.
    - Just like when a race car driver hits the gas real hard it goes from slow to fast very quickly.



TEACHER PAGE

Levels of Anger

Directions:

1. Call students' attention to Student Pages 2, 3, & 4.
2. Ask the students to remove Student Page 2 from the workbook, and fold and tear at the dotted lines to separate each anger level.
3. Ask for volunteers to read the role plays.
4. Tell the students to hold up the anger level that they think each person is having.
5. Go over discussion questions.

Role Play 1: (Tommy and Jarod)

[Both boys are walking towards each other on the way to class. Neither of them are watching where they are going and they slam into each other, their books falling to the floor.]

(COLLISION!)
Tommy: Hey, watch where you're going! (IRRITATED)
Jarod: Me!? You're the one who ran into me, you idiot!! (ANGRY)
Tommy: (shoves Jarod) Who are you calling an idiot!? (ENRAGED)
Jarod: Quit it! .... (ANGRY)

Discussion:

1. At what level of anger was Tommy? (ENRAGED)
2. Did Tommy go straight to that level, or did he hit other levels on the way? (from IRRITATED to ENRAGED)
3. At what level of anger was Jarod? (ANGRY)
4. Did Jarod go straight to that level, or did he hit other levels on the way? (from CALM straight to ANGRY)
5. What do you think Tommy or Jarod could have done to manage the conflict?

Answer to #5 across all situations:

- Try to calm down and talk the situation out.
- Apologize for getting angry and/or saying nasty things to the other person.
- Leave the situation if it seems too out of control.

TEACHER PAGE

Levels of Anger, con't

Role Play 2: (Lisa and Terry)

[Terry is worried about the trouble she has seen at home. Her parents have been fighting, and she's afraid they will get a divorce. She feels bad about not having her part of the science project done, but she doesn't feel comfortable telling Lisa about what is worrying her.]

(Lisa, already irritated, sees Terry getting off the school bus.)

Lisa: Terry, where is your part of our science project? We are supposed to hand it in to Ms. Johnston in two days. (IRRITATED)

Terry: I don't have it. (CALM)

Lisa: You don't have it!? Is that all you have to say about it? I worked ALL weekend on my part of the project and you don't have it!!? (ANGRY)

Terry: That's what I said, I don't have it. (IRRITATED)

Lisa: Well, Terry, that's the last time I make the mistake of depending on you! You're lazy! I care about my grades, and I don't want to disappoint Ms. Johnston! (ANGRY)

Terry: Don't worry Lisa. I wouldn't work with you if you asked me! (ANGRY)

Discussion:

1. At what level of anger was Lisa? (ANGRY)
2. Did Lisa go straight to that level, or did she hit other levels on the way? (already IRRITATED to ANGRY)
3. At what level of anger was Terry? (ANGRY)
4. Did Terry go straight to that level, or did she hit other levels on the way? (from CALM to IRRITATED to ANGRY)
5. What do you think Lisa or Terry could have done to manage the conflict?

Role Play 3: (John and Bobbie Sue)

[John and Bobbie Sue are sitting in class doing seatwork, and John chooses to pull on Bobbie Sue's hair. After John tugs on her hair, she turns and says:]

Bobbie Sue: Please don't do that. You're interrupting my classwork. (IRRITATED)

John: I'm just playing. (CALM)

Bobbie Sue: Well, you've had your fun, now stop! (IRRITATED)

(She turns back around and John immediately tugs on her hair again.)

Bobbie Sue: I told you to quit that! I'm not going to finish my work and we're both going to get in trouble! (ANGRY)

(John laughs and moves her desk a little with his foot.)

Bobbie Sue: (Jumps out of her desk and yells:) Leave me alone!! Can't you get it through your thick skull that I've had enough!? (She stomps off) (ENRAGED)

Discussion:

1. At what level of anger was John? (CALM)
2. Did John go straight to that level, or did he hit other levels on the way? (stayed on CALM)
3. At what level of anger was Bobbie Sue? (ENRAGED)
4. Did Bobbie Sue go straight to that level, or did she hit other levels on the way? (from IRRITATED to ANGRY to ENRAGED)
5. What do you think Lisa or Terry could have done to manage the conflict?

STUDENT PAGE 2

Calm

Irritated

Angry

Enraged

STUDENT PAGE 3

Levels of Anger

Directions:

1. Fold and tear at the dotted lines to separate each anger level.
2. Volunteers will be asked to read the role plays.
3. You will be asked to hold up the anger level that you think each person is having.
4. Be prepared to discuss your answers.

Role Play 1: (Tommy and Jarod)

[Both boys are walking towards each other on the way to class. Neither of them are watching where they are going and they slam into each other, their books falling to the floor.]

(COLLISION!)

Tommy: Hey, watch where you're going!

Jarod: Me!? You're the one who ran into me, you idiot!!

Tommy: (shoves Jarod) Who are you calling an idiot!?

Jarod: Quit it! ....

(Answer teacher questions)

STUDENT PAGE 4

Levels of Anger con't

Role Play 2: (Lisa and Terry)

[Terry is worried about the trouble she has seen at home. Her parents have been fighting, and she's afraid they will get a divorce. She feels bad about not having her part of the science project done, but she doesn't feel comfortable telling Lisa about what is worrying her.]

(Lisa, already irritated, sees Terry getting off the school bus.)
Lisa: Terry, where is your part of our science project? We are supposed to hand it in to Ms. Johnston in two days.
Terry: I don't have it.
Lisa: You don't have it!? Is that all you have to say about it? I worked ALL weekend on my part of the project and you don't have it!!?
Terry: That's what I said, I don't have it.
Lisa: Well, Terry, that's the last time I make the mistake of depending on you! You're lazy! I care about my grades, and I don't want to disappoint Ms. Johnston!
Terry: Don't worry Lisa. I wouldn't work with you if you asked me!

(Answer teacher questions)

Role Play 3: (John and Bobbie Sue)

[John and Bobbie Sue are sitting in class doing seatwork, and John chooses to pull on Bobbie Sue's hair. After John tugs on her hair, she turns and says:]

Bobbie Sue: Please don't do that. You're interrupting my classwork.
John: I'm just playing.
Bobbie Sue: Well, you've had your fun, now stop!
(She turns back around and John immediately tugs on her hair again.)
Bobbie Sue: I told you to quit that! I'm not going to finish my work and we're both going to get in trouble!
(John laughs and moves her desk a little with his foot.)
Bobbie Sue: (Jumps out of her desk and yells:) Leave me alone!! Can't you get it through your thick skull that I've had enough!? (She stomps off)

(Answer teacher questions)

Lesson Seven

Problem Solving: Step by Step - Part 1

7 Problem Solving: Step by Step

TEACHER PAGE

Objectives:

1. **To introduce students to the idea of structured problem solving as a strategy to avoid unwanted conflict and achieve personal and academic goals.**
2. **To discuss obstacles and goals as two common characteristics of all problems.**
3. **To discuss and rehearse problem definition skills.**

Time: One class period (approx. 45-50 minutes).

TEACHER PAGE

Decisions and Problems

Teacher Note: Ask the students "What decisions have you made already today?" Some examples include what to wear, what to eat, how to fix your hair, what route to take to school, etc. You can also provide some examples of your own.

Directions:

1. Have the students turn to Student Page 24, "Decisions and Problems" and read the following background information aloud.
2. Facilitate a brief class-wide discussion and answer any questions.

Background:

1. Decision - we make countless decisions on what to do and how to behave every day. Most decisions are relatively easy. A decision becomes a problem when we aren't sure what to do or what decision to make.
2. Problem - a question or situation that presents a person with uncertainty or difficulty.

Teacher Note: Point out that all problems have two characteristics in common: (a) a goal and (b) one or more obstacles.

3. Goal - represents something a person wants.
4. Obstacle - represents something that gets in the way of what a person wants.

Example: A person wants to go out for football (goal), but their grades are too low (obstacle).

STUDENT PAGE 24

Decisions and Problems

Decision	we make countless decisions on what to do and how to behave every day. Most decisions are relatively easy. A decision becomes a problem when we aren't sure what to do or what decision to make.
Problem	a question or situation that presents a person with uncertainty or difficulty.

Characteristics of all Problems

Goal	represents something a person wants.
Obstacle	represents something that gets in the way of what a person wants.
Example	A person wants to go out for football (goal), but has grades that are too low (obstacle).

TEACHER PAGE

Problem Solving Steps

Directions:

1. Ask the students to turn to Student Page 25, "Problem Solving Steps."
2. Ask the students to follow along as you read the steps aloud or have a student read them.
3. As you discuss the accompanying examples, have students identify some of their own examples that can be found in the hassle logs. Remember to collect all hassle logs at the end of the lesson.

Teacher Note: Learning to manage anger and aggression sets the stage for making decisions about the alternative methods to resolve interpersonal problems and conflicts. Additional tools for decision-making will help students exhibit more self-control in various situations. Explain that solving a problem is easiest if we do it one step at a time.

Steps

1. Define the problem - Stop and think: What is the problem?

2. Consider the alternatives - What can I do?

3. Evaluate possible consequences - What will happen if?

4. Choose an alternative - What should I choose?

5. Implement the alternative - Try out your choice.

6. Evaluate the outcome - How did I do?

Teacher Note: The first step is to stop and think, and identify what the problem is. The important point to stress here is that if we have a problem, we have to stop and think or we may decide too quickly.

STUDENT PAGE 25

Problem Solving Steps

1. Define the problem
   Stop and think: What is the problem?

2. Consider the alternatives
   What can I do?

3. Evaluate possible consequences
   What will happen if?

4. Choose an alternative
   Which should I choose?

5. Implement the alternative
   Try out your choice._

6. Evaluate the outcome
   How did I do?

Note: The first step is to stop and think so that you can identify the problem.

TEACHER PAGE

Defining the Problem

Directions:

1. Direct the students to turn to Student Page 26, "Defining the Problem" and read the scenario.
2. Have the students complete the accompanying exercises.
3. Have various students share their answers and conduct a class-wide discussion.

Scenario: You see another student in the hall with his/her arm around your steady girlfriend/boyfriend.

Teacher Note: Point out that defining the problem accurately and in a manner that leaves open a possible solution that will avoid trouble is an important first step. Point out that saying to yourself "stop and think" will give you time to decide what to do. These words can act as a reminder so that we don't act without first defining the problem.

Note: The following example defines the problem accurately and in a way that nonaggressive solutions are possible.

"I want to tell him/her that I don't like that (goal) but since she's there, he/she might want to show off and I may get into a fight (obstacle).

STUDENT PAGE 26

Defining the Problem

Directions:

1. **Read the following scenario.**
2. **Complete the accompanying exercises which include defining the problem and identifying the goal(s) and obstacle(s).**
3. **Be prepared to share your answers with the class**

Scenario: **You see another student in the hall with his/her arm around your steady girlfriend/boyfriend.**

1. Define the problem. ______________________________

____

____

2. Identify the goal(s) in your definition.

____

____

3. Identify the obstacle(s) in your definition.

____

____

TEACHER PAGE

Defining the Conflict: Role Play

Directions:

1. Choose a problem of your own or one that the students can relate to (e.g., someone bumping into you in the hall) and model self-instructions for the students aloud. Take a noticeable deep breath and tell yourself to "stop and think." Then define the problem with goal(s) and obstacle(s) identified.
2. Direct the students to turn to Student Page 27, "Defining the Problem: Role Play." Have the class first define the scenario problem with goal(s) and obstacle(s).
3. Then, choose two students to role-play the scenario.

Teacher Note: Have "student B" self-instruct aloud, but tell the class that covert self-instructions would be used in a real situation. Emphasize "I" statements in problem definition. That is, the goals must be yours because the only behavior that you can change for certain is your own. It dose little good to say that a problem will be solved if someone else changes their behavior.

4. Facilitate a discussion.

5. You may have different students do the same role play, time permitting.

Teacher Note: A possible definition for the role play might be — "I don't want to fight this guy here and now (goal), but he's gonna hit me if I don't think of something fast (obstacle)."

STUDENT PAGE 27

Defining the Conflict: Role Play

Directions: 1. As a class you will define the following problem which will include goal(s) and obstacle(s).

2. Then, two students will be chosen to act out the role-play that follows. The student who must define the problem will first take a noticeable deep breath and self-instruct himself/herself aloud to "stop and think."

What are some possible definitions for this scenario?

Scenario: Imagine that you are about to go into school. Just before you go inside, your cousin comes up to you and begs you to leave school with him/her to go look for some kids who were threatening him/her earlier on the way to school. You have two important tests first and second hour and you are sure you can pass them. But s/he's your cousin and if s/he goes alone, s/he could get hurt.

Role-play the following scene of a young man who is mistakenly confronted by an angry peer between classes:

- Student A --- "Say man! I heard your cousin say you were going to kick my butt."
- Student B --- "What are you talking about?"
- Student A --- "You're a punk! I'll kick your butt right now."

What if that was you (student B), and you had never seen this student before in your life. You take a deep breath and self-instruct (aloud) yourself to "stop and think." Then you define the problem.

Lesson Ten

Problem Solving Implementation

10 Problem Solving Implementation

TEACHER PAGE

Objectives:

1. To review the problem solving process.
2. To provide students with more opportunity to practice the problem solving procedures.
3. To provide students with an opportunity to practice self-evaluation strategies.
4. To provide students with an opportunity to practice self-reinforcement and self-coping techniques.

Time: One class period (approx. 45-50 minutes).

TEACHER PAGE

Problem-Solving Review

Directions:

1. Remember to collect student hassle logs at the end of the class period.

2. Have the students turn to Student Page 25, "Problem Solving Steps," and briefly review the 6 steps.

3. Model the problem-solving process using a problem of your own. Remember to self-instruct aloud.

4. Direct students to turn to Student Page 33, "Problem-Solving" and complete the exercise based on one of their hassle log entries.

5. Have student volunteers share a situation from their hassle logs. As a class discuss each step in the problem solving process. The student will receive feedback from the class and teacher regarding their decisions in the process.

6. Following the class-wide discussion, have students work in pairs to practice using the problem-solving steps, as well as self-evaluative techniques, including self-reinforcement or self-coping statements).

Teacher Note: Circulate around the classroom to provide feedback and to ensure that the students are completing the process appropriately. Additionally, make sure that each student has an opportunity to go through the problem solving steps using a problem of their own that they choose to share, as well a chance to provide feedback.

STUDENT PAGE 33

Problem-Solving

Directions: 1. Using a problem from one of your hassle log entries, complete the following problem-solving exercises.

Define the problem

Identify possible solutions

Evaluate each possible solution ("What will happen if...")

Put a star by the solution you think is best and would put into action.

How would you self-evaluate? What might you do differently next time?

List one self-reinforcement (i.e., solution worked) and one self-coping statement (i.e., the solution didn't work as planned)

APPENDIX E

REPRESENTATIVE SAMPLE OF TREATMENT FIDELITY OBSERVATION CHECKLISTS

CBI Curriculum

Lesson 1

Treatment Fidelity Check

Directions: Check each activity as it occurs.

Time started: ______________ Time ended: ______________

1. Definitions overhead shown and discussion facilitated ______________
2. Student page one, "Identifying Escalation," completed ______________
3. Teacher explained the different levels of anger and how they relate to each other ______________
4. Teacher showed "Levels of Anger" overhead ______________
5. Students read role plays & identified an anger level: Student pages 3 & 4, "Levels of Anger" ______________

Comments:

CBI Curriculum

Lesson 7

Treatment Fidelity Check

Directions: Check each activity as it occurs.

Time started: ______________ Time ended: ______________

1. Teacher read background information aloud from student page 24, "Decisions and Problems" ______________
2. Student or teacher read aloud student page 25, "Problem Solving Steps" ______________
3. Student page 26, "Defining the Problem," completed ______________
4. Teacher modeled self-instructions to a problem of his/her own: Teacher page, "Defining the Conflict: Role Play" ______________
5. Students acted out the role play on student page 27, "Definng the Conflict: Role Play" ______________

Comments:

CBI Curriculum

Lesson 10

Treatment Fidelity Check

Directions: Check each activity as it occurs.

Time started: ______________ Time ended: ______________

1. Teacher modeled Problem Solving Process using a problem of his/her own ______________
2. Students shared a situation from their hassle log and class discussed each step in the Problem Solving Process ______________
3. Student page 33, "Problem-Solving" completed ______________
4. Students practiced problem-solving steps and self-evaluative techniques in pairs ______________
5. Teacher circulated around class and provided feedback to students while they worked in pairs ______________

Comments:

APPENDIX F

HASSLE LOG

Hassle Log

Name________________________________ Date________________

Time:

- ☐ Before School
- ☐ PM classes
- ☐ AM classes
- ☐ After School
- ☐ Lunch

Location:

- ☐ In class
- ☐ Gym area
- ☐ Commons
- ☐ In the hall
- ☐ Front of building
- ☐ Lunchroom
- ☐ Restroom
- ☐ Administrator's office
- ☐ Other____________________

Trigger:

- ☐ Somebody did something I didn't like
- ☐ Somebody took something of mine
- ☐ Somebody shoved/charged me up
- ☐ Somebody said something I didn't like
- ☐ Somebody told me to do something
- ☐ Other____________________

Who Was That Somebody?

- ☐ Administrator
- ☐ Student
- ☐ Hall aide
- ☐ Teacher
- ☐ Substitute Teacher
- ☐ Other____________________

What did you do?

- ☐ Hit him/her
- ☐ Walked away
- ☐ Yelled at him/her
- ☐ Broke something
- ☐ Reported it
- ☐ Refused to comply
- ☐ Talked it out
- ☐ Other______________________________
- ☐ Threatened him/her
- ☐ Complied
- ☐ Talked-back/argued

How Angry Were You?

1 2 3 4 5

Not angry at all Moderately Burning Mad!

Check ✓ All That Apply:

- ☐ The consequences were in my best interest
- ☐ I would like to do the same again in a similar situation
- ☐ I am proud of my behavior
- ☐ The consequences were not in my best interest
- ☐ I didn't control my anger and behavior as much as I would like to
- ☐ I need to work harder at handling triggers like this

APPENDIX G

PILOT QUESTIONNAIRE PROTOCOL

Pilot Questionnaire Protocol

Was the lesson clearly written?

Was the lesson useful for teaching the students?

Was the content of the lesson valuable for middle school students?

Was the lesson complete, covering everything needed for the topic area?

Was the lesson well organized?

Was the material easy to use?

Identify changes you would like to see to the curriculum.

What are the strengths of the material?

What are the weaknesses of the material?

APPENDIX H

INFORMED CONSENTS

Parent Notification and Permission Form

Dear Parent or Guardian:

Faculty members and graduate students from the University of Florida are working to develop a cognitive-behavioral program to help students deal appropriately with feelings of anger and interpersonal conflict and conduct a research project concerning the programs effectiveness. Project staff will be coming to school throughout the 1998-1999 school year to observe classroom lessons and to gather information about anger expression by students in the school and the community. They are working under the direction of Dr. Stephen Smith from the College of Education at UF.

As part of this research effort, we would like to ask your son/daughter to complete a brief questionnaire and his/her teacher and you to complete brief checklists about his/her behavior at home and in school. These checklists/questionnaires will take 15-20 minutes to complete and we are requesting that pre, post, and follow-up instruments be completed. For the purposes of the University of Florida's study, your child's identity will remain confidential, to the extent provided by law, through coding; that is, no names or identifying information will be reported. Your child's name will be replaced with a code number on all written materials. Only University of Florida faculty and graduate students working on this project will have access to the information and all documents will be stored at the University throughout the project's completion. We would also like to interview your son/daughter as part of this research effort. We would like to audiotape this interview, with your and your child's permission. The interview will last 20-30 minutes and all audiotapes will be erased at the completion of the project. If your child does participate in the project, he/she does not have to answer any questions he/she does not wish to answer. Each student will be placed in one of three groups for purposes of the study. One group will receive 15 lessons, one group will receive 10, and the last group will receive no lessons. If your child receives no lessons or 10, you will have the option to request that he/she receive the 15 lessons (5 for students who received 10) at the completion of the study (Spring 1999). Participation or nonparticipation in this study is voluntary and will not affect your child's grade or standing in the classroom. There are no anticipated risks and we anticipate that there may be some direct or indirect benefits for your son/daughter as a participant by increasing his/her opportunities to deal with anger more effectively and to resolve conflicts in an appropriate, constructive manner. **There will be no compensation**. If you decide to grant permission for your child to participate in this study, please be aware that you or your child may withdraw that permission at any time. If you have any questions or concerns, you may contact Rowand Robinson, graduate student, at the University of Florida, (352) 392-0726, ext. 288 or Dr. Stephen Smith, faculty supervisor, at the University of Florida, (352) 392-0701, ext. 247.

Questions or concerns about participants' rights may be directed to the UFIRB office, PO Box 112250, University of Florida, Gainesville, FL 32611, (352) 392-0433.

Thank you for your cooperation.

Rowand
Rowand Robinson

Stephen W. Smith
Stephen W. Smith, Ph.D.

CBI Anger Expression Project

Please tear off this section and return it as soon as possible.

I have read the procedures described above and I voluntarily give my permission for my son/daughter ____________________ to participate in this project. I have received a copy of the description. I have also discussed this project with my child.

____________________	____________________	____________________
Parent/Guardian	2nd Parent or Witness	Date

I agree to complete the checklists about my child. ____________________ ____________________

yes/no initials

Approved by the
University of Florida
Institutional Review Board

UNIVERSITY OF
FLORIDA

CBI Anger Expression Project
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PO Box 117050; 362 Norman Hall
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Dear Teacher/Administrator:

We are conducting research on a project to determine the effectiveness of a Cognitive-Behavioral Intervention project to help students deal effectively with feelings of anger in school. Because you are aware of the environment and behavior of the students at your school, we would like to ask you a few questions.

The interview will last approximately 15 minutes. We would like to audiotape the interview with your permission. All identities will be kept confidential, and all names will be changed during transcription. The interview transcriptions will be kept in our grant office at 362 Norman Hall, and only the research staff will have access to them. At the conclusion of the project, all tapes will be erased. There are no anticipated risks or direct benefits to you as a participant.

Your participation is completely voluntary. If you participate, you do not have to answer any of the questions that you do not wish to answer, and you are free to withdraw your response at any time without consequence. You will not be compensated for your participation in the study. We assure you that your responses will be kept confidential, to the extent provided by law, through coding; that is, no names or identifying information will be reported.

If you have any questions, comments, or concerns about this study, please contact Rowand Robinson, graduate student, at (352) 392-0726 EXT 288 or Dr. Stephen Smith, faculty supervisor, at (352) 392-0701 EXT 247.

Questions or concerns about participants' rights may be directed to the UFIRB office, PO Box 112250, University of Florida, Gainesville, FL 32611 at (352) 392-0433.

I have read the procedure described and agree to participate in the investigation of the Cognitive Behavior Intervention Anger Expression Program. I have received a copy of this form.

Name

Signature

Date

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BIOGRAPHICAL SKETCH

Rowand Robinson was born in Charleston, South Carolina, on February 14, 1966. He attended and graduated from Bishop England High School in Charleston in 1984. Rowand attended Clemson University where he initially majored in electrical engineering. He switched majors in 1987 and received a B.A. in psychology with a minor in communications and cooperative education (electrical engineering) in May, 1989.

Immediately following graduation, he began working in a wilderness camp with children who have behavioral disorders (BD) followed by returning to school to work toward getting his teaching degree. He received an MAT, with an emphasis on working with children with BD, at the College of Charleston in May, 1992. His experiences at the College of Charleston included coordinating the opening and use of the Instructional Materials Center and assisting the dean of the Department of Special Education and two chairpersons in various projects. Additionally, while studying at the College of Charleston, he accepted a part-time position with the Continuum of Care for Emotionally Disturbed Children. His responsibilities included working individually with children with BD in unstructured activities, as well as providing input regarding the progress of the child to help with educational placement decisions.

In 1992, he accepted a position teaching children with BD in an elementary, self-contained, public school setting. During this time, he continued working with the

Continuum of Care for Emotionally Disturbed Children and served as a member of the advisory committee to the Superintendent of Charleston County Schools which was comprised of one teacher from every school in the county, as well as the superintendent and his staff.

While completing his doctoral studies at the University of Florida, Rowand served as a graduate research and teaching assistant in the Department of Special Education and worked for two years as an intern supervisor. He also presented at various state and national conferences and had three articles published in professional journals. Additionally, he was active in the Special Education Association of Graduate Students, serving as secretary. He is also a member of several divisions of the Council for Exceptional Children and the Education Law Association.

In the future, Rowand plans to continue his research in the area of prevention of emotional and behavioral disorders with emphases on anger control and problem solving skills. He also plans to teach at the university level and wants to continue serving k-12 populations directly.

I certify that I have read this study and that, in my opinion, it conforms to acceptable standards of scholarly presentation and it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Stephen W. Smith

Stephen W. Smith, Chair
Associate Professor of Special Education

I certify that I have read this study and that, in my opinion, it conforms to acceptable standards of scholarly presentation and it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Mary T. Brownell

Mary T. Brownell
Associate Professor of Special Education

I certify that I have read this study and that, in my opinion, it conforms to acceptable standards of scholarly presentation and it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Hazel A. Jones

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Associate Professor of Special Education

I certify that I have read this study and that, in my opinion, it conforms to acceptable standards of scholarly presentation and it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

M. David Miller

M. David Miller
Professor of Foundations of Education

I certify that I have read this study and that, in my opinion, it conforms to acceptable standards of scholarly presentation and it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that, in my opinion, it conforms to acceptable standards of scholarly presentation and it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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